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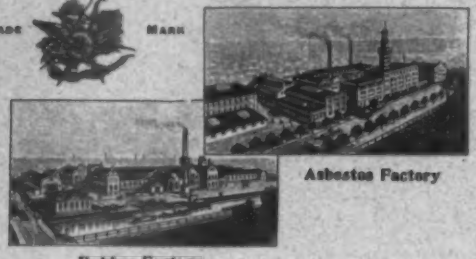

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RUBBER FROM NEGLECTED SOURCES.

HARKING back to the ancient history of the rubber trade, in fact to the beginning of the reclaimed rubber business, does any one recall with what scorn the first lots of "shoddy" were received? It took rubber manufacturers many years to even try the stuff. When after a time they experimented with it and discovered it useful, they did it in a shamefaced manner and, if they were not talented liars themselves, hired superintendents who were, who resolutely denied that they used a pound of the despised product. Nor did any one believe that the business would ever be a large one. To-day it is accepted as one of the necessities of the trade, and indeed, were it not for reclaimed rubber, the price of crude would be simply out of sight.

A business that is very similar to the reclaimed rubber business and that offers a field fully as important, quite as large or larger, and undoubtedly more profitable, is the mechanical extraction of rubber from the lesser producers of the gum, that is, shrubs, vines, tubers, and latex bearers of that ilk. Thousands of tons of rubber of good quality, are to-day practically wasted because these sources of supply are not exploited in a scientific manner. We all laugh at the "rabbit weed" proposition in Colorado and justly; many laugh at the Guayule proposition in Mexico and unjustly. This is because one shrub does not contain rubber that can be, by any mechanical means, yet devised, taken out profitably, while the other, in a small way, to be sure, has been proved a success.

In the writer's opinion, the great mass of rubber to come eventually from treatment of the minor rubber producers, will not come from the Mexican shrub. It is perfectly possible that the Ceará rubber tree, which produces abundant milk and in which the quality of the milk is just as good in a year old plant as it is in one a century old may be planted as an annual crop, and its lusty first year's growth of twelve feet harvested just as sugar cane is.

There is more rubber in one Ceará stalk than there is sugar in one stalk of cane, and sugar sells for 5 cents a pound and Ceará rubber for twelve times as much. Again it may be that the *Hevea* or the *Castilloa* may lend themselves to such annual harvesting and even if the rubber does contain more resin, it is worth fully 50 cents a pound, which ought to bring a good working profit, once a mechanical process is perfected that will enable work on a large scale. Lest some of the rubber agnostics should claim that no great amount of rubber can come from such despised sources, we would ask them to ponder on the source of 3,000,000 pounds of Benguela rubber that have come into the market in a single year. If they are very agnostic they probably won't know and it is with much gratification that we enlighten them. Benguelas come from the roots of a small shrub dug up by lazy natives, scraped in water, half of the product be-

ing wasted, and even then the business is profitable. With a practical extraction plant and with natives bringing hundreds of tons of these roots to it, is it not reasonable to suppose that the product could be increased and its value much enhanced? We might go further and cite a half score of other scources, but it is hardly worth while.

We do pause to say, however, that ten years from now a vast amount of rubber will come regularly to the market from such sources as those mentioned. The agnostics will have forgotten their pessimistic prophecies then and will be looking ahead for something else in the line of progress to carp at.

IS THE TIDE TURNING?

THE Editor of THE INDIA RUBBER WORLD has been much besieged by questioners, promotors, investors, lawyers, and others, for information regarding rubber culture in Mexico. The inquiries as a rule came down to one final query: "Will rubber trees grow in Mexico under cultivation and produce rubber?" Really two questions in one. That the *Castilloa* species will flourish in Mexico under proper conditions no one can contradict. Whether it will produce rubber in paying quantities, some might be able to say, "Yes," but the proof was not forthcoming. In other words, of all the plantations that have been installed in the last seven or eight years throughout the *tierra caliente*, none as far as the knowledge of the writer went were actually producing rubber regularly or in any shape except sample lots—really not much more than laboratory experiments.

There are no doubt numbers of plantations owned by Mexicans that produce a certain amount of rubber annually from cultivated trees. No records, however, have been kept of amounts gathered or prices received, and it is probable that such rubber, carelessly collected, has passed as the product of wild trees. All that the writer could do therefore, was to say that cultivated trees certainly did grow and grow vigorously, that it was his belief that they would produce rubber abundantly but that he did not know of actual shipments of such rubber. In a recent letter, however, from Mr. James C. Harvey, part owner of "La Buena Ventura" plantation, a man who not only has a broader knowledge of rubber planting in Mexico than almost any other, but one whose carefulness and sincerity are above question, the following statement is made:

> I took out 350 pounds of fine, clean scrap this year from some of my seven year old trees, and on the whole the results were quite gratifying. The rubber was divided between the Boston Belting Co. and the Hood Rubber Co., and it netted me 92½ cents a pound.

The writer has been over every foot of Mr. Harvy's plantation, saw the trees of which he speaks when they were thrifty four year olds, and while he has no information as to how many trees were tapped or what the cost of the rnbber to Mr. Harvey might be, he hails this report as the first tangible evidence that properly conducted plantations in Mexico will be rubber producers. Investors in rubber plantations in that country have certainly learned a severe lesson, for all the mistakes that could possibly be made have been made, and it is only fair to those who have played the game fairly and intelligently that the successes, even though small at first, be recorded and that all legitimate encouragement be given to what should be a great American industry.

CANADIAN IMPORTS OF RUBBER GOODS have declined 20 per cent. during the last two years, and as there is reason for believing that the total Canadian consumption has increased during that period, the enterprising manufacturers of the Dominion are to be congratulated upon the fact. At the same time, the rubber men of the United States will find consolation in knowing that imports from this side the border have not shared in the decline.

THE RUBBER TIRE MAKERS are to be congratulated upon the steady improvement in their products as evidenced at each succeeding yearly automobile show. Without doubt each of the leading factories is now turning out the best tires it is capable of making. But in view of the superiority of the tires of to-day over those of five years ago, it is probable that the limit of development is far from being reached.

THE OPEN WINTER, however it may be regarded by the rubber footwear makers, ought to prove a good thing for the tire trade, on account of the greater opportunity it affords for the use of automobiles.

AFFAIRS OF THE UBERO COMPANIES.

THE Tolosa Rubber Co. has been formed with headquarters at No. 176 Federal street, Boston, to succeed the Ubero Plantation Co. of Boston, the troubles of which were reported at length in these pages some months ago. Claudius W. Rider is president, William L. Wadleigh, treasurer, and the other directors, Charles T. Crocker, Sr., Frank Bryden, George H. Terpany, Levi R. Greene, William F. Sinclair, and Edwin O. Childs.==The reorganization committee of the Consolidated Ubero Plantations Co. also issues a circular to investors, stating that sufficient funds have been subscribed to the new company, the United States Plantation Co., to warrant putting the reorganization into effect and calling upon the subscribers to pay up.

AT the annual meeting of the Marion Insulated Wire and Rubber Co. (Marion, Indiana) a new board was eleeted, consisting of J. L. Barley, Robert J. Spencer, L. C. Lillard, John Prior, M. L. Lewis, and R. E. Lucas. Mr. Barley was elected president, Mr. Spencer vice-president, Hiram Beshore treasurer, and Mr. Lucas secretary and general manager. The capital has been increased 30 per cent. recently, and the board ordered the purchase of additional machinery.

A SUIT was reported in our last issue as having been filed by the Philadelphia Rubber Works and the U. S. Rubber Reclaiming Works against the S. & L. Rubber Co. (Chester, Pennsylvania) for alleged infringement of patent No. 454,442, which covers a rubber reclaiming process. The suit, it seems, was not filed by these companies, but by individuals connected with them. The S. & L. Rubber Co., in their answer filed to the suit, deny employing the process described in the patent, and also the validity of the patent, on the ground that the process was used by the president of the present S. & L. Rubber Co. before the date of the patent.

PLANS FOR RUBBER EXPLOITATION IN PERU.

THE rubber resources of southeastern Peru, long known to the outside world only in an indefinite way, now appear likely to be developed on an important scale in the near future. Readers of THE INDIA RUBBER WORLD from its earliest issues may recall a number of articles, at one time or another, pointing to the existence of rubber of good quality over practically the whole of Peru east of the Andes, but for the most part its exploitation was long confined to that portion of the country accessible by means of the Amazon. Now considerable quantities are shipped from the port of Iquitos, direct by ocean steamers to Europe, although Iquitos is about 2000 miles from the seaboard.

But the region thus provided with means of transportation is exceeded in scope by the region lying westward of Bolivia —a region singularly landlocked—and cut off from the Pacific coast by the mountain range. Communication with the outside world, so far as the native Indians are concerned, does not exist; there is even scarcely communication with the national capital, Lima. Under these disadvantages, exploration of the country by outsiders has been very limited, and that only in search of particularly rich resources. It was natural that the hope of finding important mineral resources should be the first incentive to foreigners to visit these remote districts, and the first definite knowledge of the extent of the rubber forests of southeastern Peru may be said to have been gained by mining engineers. Likewise it was mining companies, with large capital, which first established relations with the Peruvian government for the development of the region referred to.

RUBBER TREE (HEVEA).
[Two or three tin cups for catching the latex may be seen on the trunk.]

The government, it may be said, has been liberal and farsighted, as a rule, recognizing that as neither the people nor the national treasury had the means for developing the rich native resources, it must be made to the interest of foreign capitalists to devote their energies to the opening of this remote virgin field. In consequence the resources of the country have been studied, enterprises have been established, and the oldtime difficulties of transportation and communication are being overcome. What risks man will take in the hope of discovering gold, all know. But in these days of high priced rubber, the search for this very necessary commodity is scarcely less enthusiastic, and hence, after mining the precious metals of Peru, rubber gathering is likely to prove the most important interest.

Already no little pioneer work has been done in connection with rubber in southeastern Peru, by a number of people, for the most part working on a small scale and without coöperation. This era, however, is passing; indeed, some considerable rubber enterprises are under way, the consolidation of three of which can now be announced.

The new company, to be known as The Inca Rubber Trading Co., proposes to take over the assets of the Inca Rubber Co., The Carabaya Rubber and Navigation Co., and the Inca Mining Co., except the mines of the last named company. The Inca Rubber Co. and the Inca Mining Co. hold from the Peruvian government large concessions of lands, in consideration of which they have built roads extensively in a region which before had scarcely forest trails. They have built a fine road some 270 miles in length, from Tirapata, Peru, over the Andes mountains and down to the navigable waters of the great rubber producing territory. This road, which has been under construction for nine years, is a magnificent piece of work, and opens up a country said already to produce an important amount of rubber, most of which now goes over the falls of the Madeira to San Antonio, and then by river steamers to Manáos and Pará—a costly, dangerous, and tedious journey.

It should be noted here that the navigable rivers above referred to are not navigable to seaboard, but only converge into the badly obstructed Madeira. The purpose of the new Inca company will be to deflect this rubber—and such other rubber as may be gathered within their sphere of influence—to their own route and lay it down in

ONE OF THE INCA RUBBER CAMPS.

SMOKING RUBBER IN THE SAME CAMP.

"THE OROYA," INAMBARI RIVER.
[A station of the Inca Mining Co.]

New York in six weeks' time as against six months' by the other route, and at very much less cost.

The Carabaya company, already named, and which is embraced in the new enterprise, is now considering a road from Ollachea, about 118 miles in length, opening up a similar territory the completion of which would entitle it to receive from the government a grant of rubber lands estimated to be about 900,000 acres. The concession of the old Inca companies covers about 1,000,000 acres. By means of these roads the company plans to control some 2000 miles of navigable streams, in a territory in which are upwards of 8000 natives, who are India-rubber gatherers, or can be made so, residing with their families. The concessions lie in the uplands, where the climate is said to be healthy, one where proper oversight to laborers can be given by white men.

BRIDGE BUILT WITH RAILROAD RAILS.
[Fifteen miles from Tirapata, across the Asillo river; tested to 25 tons; length 200 feet.]

The new company plans to handle, as a minimum, 2,000,000 pounds of rubber a year, coming partly from their own gatherers and partly from the districts mentioned.

The flotation of the company is in the hands of H. W. Bennett & Co., of New York. The authorized capitalization is $5,000,000 in twenty year 6 per cent. sinking fund gold bonds and $5,000,000 capital stock. The first issue will be $1,000,000 in gold bonds to be sold at par, with $4,000,000 gold bonds in the treasury. The organization of the company so far as officers go is not quite complete. At present the list is: H. W. Bennett, first vice president; A. B. Luther, second vice president and general manager; H. D. Selleck, secretary. The directors are H. W. Bennett, E. B. Luther, H. M. Sadler, E. H. Gary, C. P. Collins, W. W. Bell, Juan Pardo, H. D. Selleck, and Chester W. Brown. Juan Pardo, by the way, is a brother of the president of Peru, and a member of the Peruvian house of representatives. Mr. H. W. Bennett has successfully engineered some large deals, the only one touching the rubber business, however, being the Tehuantepec Rubber Culture Co. Mr. A. B. Luther is an expert on tropical agriculture and has just returned from Peru, where he carefully inspected the country in which the concessions lie. Mr. H. M. Sadler was at one time prominent in the United States Rubber Co. as assistant general manager.

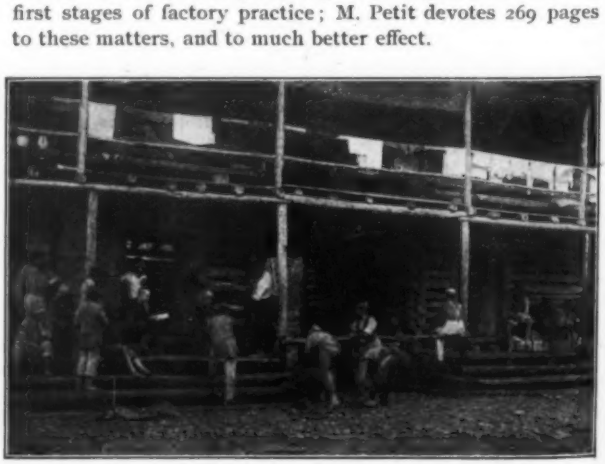
THE EDITOR'S BOOK TABLE.

MANUELS—RORET.—NOUVEAU. MANUEL COMPLET DU FABRICANT d'Objets in Caoutchouc, Gutta-percha, Factice, Toile et Taffetas Cirés; suivi de l'Imperméabilisation des Étoffes, Papiers, Cuirs, etc. Par MAIGNE. Nouvell Edition par Georges Petit. Paris: Encyclopédie—Roret, L. Mulo. 1906. [Paper. 2 vols., 32mo. Pp. VIII + 454; II + 324. Price, 12 francs.]

THOSE who are familiar with Maigne's two volumes on Caoutchouc, in the Encyclopédie-Roret, will be pleased by the appearance of this revised edition up to date, and enlarged nearly a third by Georges Petit, a civil engineer.

Maigne's work came out in 1880, and was welcomed by the trade, for the sake of the usual Frankish clearness which marked its style. But in the rapid development of the trade the book became, in many respects, obsolete or inadequate. The most notable development, of course, has been the pneumatic tire, now become the most sensational feature, perhaps, of the whole rubber industry. M. Petit devotes a whole chapter to "pneus," and otherwise attempts to repair the ravages made by time in the original book. He claims with faint praise the whole category of synthetic or substitute rubbers, despite the many possible uses for these, and as if rubber manufacturers did not know what they wanted.

Another development since Maigne's 1880 edition has been the forging ahead of Africa as a great producer of rubber. Madagascar and most of the coast regions at that time sent rubber to market, but the Congo Free State and the great African inlands were only mentioned as possible producers in 1880. African rubbers, moreover, have been so extremely variable in quality and general properties, as against the relative homogeneity and constant excellence of South American rubber, that men have been led more and more to study the nature and origin of the raw material, in order that all the various sorts may be utilized to the utmost extent. Accordingly, whereas Maigne gave 153 pages to the geographical and vegetable sources of rubber, its gathering and coagulation, and the first stages of factory practice; M. Petit devotes 269 pages to these matters, and to much better effect.



WEIGHING CAUCHO AT LA UNION.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

TIME was when the cut sheet manufacturers of England, notably the Manchester firms of Macintosh and Moseley, supplied the requirements not only of England but of the continent. Of late years, however, several continental firms have taken up this branch, more particularly, however, in the thicker counts. The number of sheets that go to make up an inch depends upon the perfection of the machinery and it is understood that the engineers' drawings relative to the machinery made for the Manchester firms mentioned were not to be used for the supply of machinery to possible competitors. Some ten years ago Macintosh & Co. had the reputation of cutting the thinnest sheets, 125 of which went to an inch, but I cannot say now which firm is cutting the finest or whether any greater degree of tenuity has been attained. What I wanted chiefly, however, to draw attention to is the fact that a prominent Brussels rubber manufacturing firm who wished to buy cut sheet from England thought themselves somewhat badly treated in the preliminary negotiations for business and decided to make for themselves a year or two ago. This they are now doing on a large scale, and what is more they are selling their product in England in competition with the home firms. Probably the case is not important enough to excite the fiscal reformer, else at a moment like this with election literature on a l sides the would-be reformers might point to another example indicating the ultimate extinction of our industries.

CUT SHEET FROM ABROAD

THIS new concern has already been referred to as having its location in the factory of the defunct Hyde Rubber Works Co., Limited. The promoters of the new company are Messrs. Mandleberg, the well known waterprooting firm of Pendleton, Manchester. The capital is £33,000, and although no public issue is being made, the scheme for the private issue of the capital is as follows: Messrs. Mandleberg take 3000 deferred shares, which rank equally for dividend with the 30,000 other ordinary shares, when the latter have received 6 per cent. I don't know how far the 30,000 shares have been taken up by the public, but to some intending subscribers the scheme appears too much in favor of the promoters to suggest it as a very profitable investment, which opinion as given to me I pass in for what it is worth.

THE UNITY RUBBER CO. LIMITED.

THIS firm have now removed from London to more commodious and convenient premises at River Bank wharf, Charlton, London, S. E., adjoining the cable works of Messrs. Johnson & Phillips. The buildings are of the wood lined corrugated iron order and are extensive enough to allow of the treatment and sorting of various kinds of waste rubber to be carried out with due regard to order and cleanliness. I mention this point because the works form a good contrast to others I have visited where dirt and chaos were more conspicuous than cleanliness and order. Activity in this branch of the rubber trade is very apparent at the present time and the number of those engaged both as dealers in and collectors of scrap rubber has largely increased of late, to such an extent indeed that complaints are made that the profits to be made are on a sadly lower scale than ruled a year or two ago. At the same time the business done is much greater so that those with sufficient capital can face the future with equanimity. In Dr. Schumacher the company under notice have a manager with expert knowledge of the rubber trade and doubtless we shall soon see that many forms of waste rubber hitherto found unsalable will take their place among those which can be profitably treated for re-sale.

MESSRS. H. SCHUMACHER & CO.

THE paper read by Dr. Caspari in December before the London section of the Society of Chemical Industry and entitled "Notes on Gutta-percha and Balata" covered ground which has no great interest for the practical man, and a few words of reference here will suffice. It dealt largely with the nitro and halogen compounds which readers of Weber's and Harries's papers are familiar with in the case of rubber. In some ways the ensuing discussion was more interesting than the paper. The usual stress was laid by one speaker on the great benefits to be derived from synthetic rubber when it is made on a commercial scale, but surely the plantations in progress for the supply of the genuine article will do all that is required without our having recourse to some chemical monstrosity. The presence and remarks of D. J. Spiller were interesting, his contributions to our knowledge of the oxidation of India-rubber and Gutta-percha dating from 50 years ago. Dr. Lewkowitsch, the eminent authority on oils and fats, has evidently been studying the recent scientific contributions to the chemistry of rubber. He remarked that those who had gone over the same ground as Weber had failed to corroborate this author's figures and that before these various chemical compounds of rubber and gutta-percha could be considered as established the various laborers in the field ought to get concordant results. Certainly if the existing apathy of the practical man towards these chemical researches requires any further justification it is to be found in the substance of Dr. Lewkowitsch's remarks.

THE SCIENTIFIC SIDE

AFTER a brief interval Mr. C. J. Beaver, of Messrs. W. T. Glover & Co., has again contributed an interesting paper on the subject of insulated cables. His audience this time was the Electrical Contractors' Association. The main theme of the paper was the causes of breakdowns and the underlying moral was the necessity of buying from a reliable manufacturer who, it would appear, is not to be found outside the ranks of the Cable Makers' Association. Only a few crumbs of comfort were thrown to those practical men who want ready tests to enable them to judge of the value of samples of cable and emphasis was laid on the importance of chemical analysis as the final tribunal. With this I quite agree if it is carried out by those who are familiar with their subject and not by the head of the local technical school or the borough analyst. Rightly enough in my opinion the heat tests for rubber came in for some criticism, and the reference to the importance of good tinning of the copper wire was not

ELECTRICAL NOTES.

at all superfluous. Though apparently a simple operation and regular in its results, this tinning needs careful attention if the coating is to be of sufficient thickness to really prevent reaction between the copper and the sulphur. It seems probable that it is not a simple case of coating one metal with another but that definite alloys are formed. ==The partial electrification of the London and Brighton railway has led to some discussion in the press in the matter of the contracts for the equipment being given to the General Electrical Co. (Allgemeine Elektricitäts Gesellschaft) of Berlin. It has been explained, however, that a good deal of the work will be carried out at the Rugby works of the British Thomson-Houston Co. The facts briefly stated are that the system of electrification to be followed is the single phase high pressure, and that this particular class of car equipment has not yet received the attention of British manufacturers. In contradistinction to the existing electrified lines on the Lancashire and Yorkshire and North Eastern railways the Brighton line is to have an overhead current probably at from 2000 to 5000 volts with transformers on the cars. The lines mentioned above do not exceed 600 volts, but higher pressures find favor in German practice.

THE LIBERIAN RUBBER CORPORATION.

WITH regard to the issue of the prospectus of this concern on December 11, perhaps the most noteworthy fact is that it had a half page advertisement in a prominent financial daily (*Financial Times*), no comment being made in the editorial columns. The following day the paper contained a long leading article criticizing the company and the manner of its promotion in rather a strong tone. A day or two later the same paper published a skit prospectus from an anonymous correspondent entitled "The Siberian Lubber Co. Unlimited," which was really amusing. But the point for the ordinary reader to decide is whether the prospectus or the criticism is most entitled to favorable consideration; probably the statements in both may be considered as biased. Of course Liberian rubber is not by any means a new tool for the company promoter to handle; my memories of it go back to 1885, when Mr. C. W. Meiter and others of London got a monopoly of rubber gathering in the country. Probably the best thing that can be emphasized about the new company is the strength of the directorate, including as it does such men as Sir West Ridgway, Sir Harry Johnston, Sir Gilbert Parker, M. P., and Sir Raymond West. The fact that the Dunlop Rubber Co. have contracted to buy all the output may cause a little nervous tension among purchasers of their fine Pará motor tires, but it must be remembered that the Dunlop company have now a large business in general rubber manufacturing and that Africans must form a large part of their raw product. The contemporary referred to above comments especially on the promotion profits, which leave only £50,000 working capital out of the £220,000 being paid for the p operty. It is noteworthy that the Consolidated Rubber Syndicate which acts as the selling agent between the Monrovian Rubber Co. and the new company was only registered on December 5, 1905, the directorates of all three companies being largely identical. Apart, however, from the promoting side of the business, the main point for the investor is whether the rubber is there and whether it can be gathered regularly at a low cost. The directors seem to be confident on these points.

I MAY mention that in addition to the general mechanical rubber goods which this Manchester firm has been manufacturing in the past, a specialty is now being made of Balata belting which, it is claimed, is quite equal to anything of the sort made elsewhere. It is supplied in two qualities—the Ianco and No. 1. The firm will probably find plenty of competition in their market as, besides other British makers, there are several on the continent. These may rest assured, however, that the language used by the Irwell company in describing their goods will be warranted by the results obtained in practice, if one may judge from what has occurred in other cases.

THE IRWELL AND EASTERN RUBBER CO.

THE recently issued report of the large concern generally known under this abbreviated title is much more satisfactory than was the case a year ago, and the company's shares have now risen again to the figure at which they have been quoted for so many years. In the comments which I have seen on the report the only discordant note struck is with reference to the silence observed by the directors as to the "new business" which has absorbed £100,000 capital. Speculation is rife as to what this new business is, but the directorate seem to think that publicity would do them harm, as their attitude has been to treat it as a trade secret. There certainly is a good deal to be said in not letting your competitors know exactly what you are doing, especially if the particular business would suffer by competition. Further, if the thing proves to be non-successful those responsible for the project cannot well be called over the coals, as the loss can be put down in the general profit and loss account without being particularized.

THE SILVERTOWN REPORT.

THE remarks in the quality of plantation rubber in the December issue of this Journal are of great interest. Their trend is to show that it has not yet been shown that the new rubber is equal to that from primeval forests, much less superior to it. It is important that the actual facts should be emphasized because now that the company promoter has so largely identified himself with rubber, loose statemeuts are bound to parade themselves as indisputable facts. It is said that the new rubber is not quite suitable for elastic thread, and it is quite easy to imagine that this is so. In this connection there seems no inducement for the manufacturer to test its actual value for the purpose. Elastic thread making is in the hands of but a few firms and the risks attaching to any bad work are so great that it is quite natural that any change of material should only be adopted after careful consideration and must be attended with monetary advantages. It is suggested that an alteration in the vulcanization might prove the new rubber to be quite equal to Brazilian Pará. So it might, but as the prices of the two correspond how is the manufacturer to gain for the trouble and attendant risk in altering his customary and satisfactory procedure? The future of plantation Pará rubber does not depend on its being proved the best in the market for every possible purpose. The prospects are quite bright enough without going so far as that. It is reported that a large London produce firm has offered to buy the total output of Pará rubber from more than one plantation for 10 years at a fixed price of 5 shillings per pound. But planters should not overlook the fact that in South America there are still vast virgin regions to be tapped.

PLANTATION RUBBER.

RUBBER PROSPECTS IN LIBERIA.

THE flotation in London of a large company for exploiting rubber in Liberia, reported in these pages last month [page 124], has served to attract renewed attention to a region long known to contain rubber, though to what extent was never suspected until of late. The fact is that Liberia, though for many years recognized nominally as having a civilized government, in reality is to-day one of the least known regions of Africa. The settlement at Monrovia, in 1821, under the auspices of the United States, of a number of freed slaves, and their subsequent founding of a republic was suggested by and modelled after the creation of the colony of Sierra Leone, immediateley to the north, under British philanthropic influences, for the intended benefit of former black slaves in British dominions.

Liberia is really administered by the English speaking blacks of American origin—who do not exceed 15,000 in number—only along the coast line of 350 miles, and over a belt 35 to 40 miles wide, extending inland. The remainder of its area of 45,000 square miles is covered for the most part by forests of such density as are scarcely to be found elsewhere. Herein dwell, it is estimated, more than 2,000,000 natives—more or less savage, almost nude, and in places addicted to cannibalism—with whom the ruling caste only of late have begun to cultivate friendly relations.

Sir Harry Johnston, K. C. M. G., K. C. B., mentioned in the last INDIA RUBBER WORLD as having made a favorable report on the rubber resources of Liberia, has long been a recognized authority on Central Africa. Within the past two years he has spent some time in Liberia, where his researches were supplemented by those of Mr. Alexander Whyte, a student of African botany for a half century. As a result of their combined observations, Sir Harry recently read a paper on "Liberia" before the Royal Geographical Society (London), * from which are extracted the following details bearing upon India-rubber:

The wealth of this forest in India-rubber producing trees, vines, and bushes is without parallel in any other part of Africa, unless it be in one or two small areas of the Congo basin Counting the four rubber producing figs, there appear to be at least twenty-two trees, plants, or vines which produce salable rubber. These species include the well known and widespread *Landolphia Owariensis* and the magnificent *Funtumia elastica*, the rubber tree once so abundant in Lagos colony. The *Funtumia elastica* is stated to grow over 200 feet in height. It closely resembles in appearance the allied species *Funtumia Africana*, but there is a very considerable difference in the price of the rubber yielded by the one and the other—the rubber derived from *Funtumia Africana* may, perhaps, be sold for 18 pence [=36½ cents] a pound, but the *elastica* ranges in value from 3 to 4 shillings [=73 to 97½ cents]. The distinctive features of the leaves, flowers, and fruit, which enable the observer to decide whether he is tapping the valuable or the valueless *Funtumia*, will shortly be illustrated in my book on Liberia. The range of the *Funtumia elastica* appears to extend from the middle of Liberia eastwards as far as western Uganda. It is found in a portion of the Bahr-al-Ghazal region and in the northern part of the Congo Free State. The *Funtumia Africana* is more strictly west African in its range, from Portuguese Guinea to the Congo basin. In the western regions of the Congo Free State and in Angola a third *Funtumia* is found which, like *Funtumia Africana*, is not of much value to the rubber trade.

The new company referred to, and in which Sir Harry Johnston has become a director, has obtained a monopolistic concession from the Liberian government, and the hope exists that, for a number of years at least, the hitherto unsuspected wealth of rubber will afford a yield comparable with that of Lagos at one time. An interesting fact noted in Sir Harry's paper is that Liberia appears less unhealthy for Europeans than Sierra Leone, the Ivory Coast, the Gold Coast, or Lagos. The remarkable absence of mosquitoes is noted, and the less marked prevalence of malarial fevers Mr. Whyte, by the way, has seriously suggested the spreading of Liberian "anti-mosquito soil" over certain other parts of the earth as a beneficial measure.

* Reported in the *Geographical Journal*. Vol. XXVI (1905). Pp. 131-153.

A BIT OF BRITISH SARCASM.

A SKIT advertisement which appears in the *Financial Times* (London), and which is commented on elsewhere in these pages, ran as follows:

This Prospectus has not been filed with the Registrar of Joint Stock Companies, because he didn't seem to like it.

THE

SIBERIAN LUBBER COMPANY, UNLIMITED.

(Incorporated under Seal of Secrecy.)
CAPITAL - - £00,000,000.
Divided into a few Shares of the Largest Possible Amount.

DIRECTORS.
*Sir M. T. GASBAGS (Director of The Tyre and Sider Company).
*Sir BOMPAS BOUNDER A.O.B.
*THE BLACK MACINTOSH OF THAT ILK.
*Sir SIDESLIP FLATCATCHER, L.S.D.
*Will leave the Board as soon as possible after allotment.

BANKERS.
The Company will do its own.

SOLICITORS.
RUBIN BOSHWELL & HARD.

BROKERS.
These will be kept out as long as possible.

AGENTS.
MAKEABIT QUICKLY & QUIT.

SECRETARY (very much pro tem.),
VON DOVA JOKO.

OFFICES.
SQEEDGEE COURT.

N.B.—Please wipe your feet on the Rubber Mat; it's all the Rubber we have.

PROSPECTUS.

This Company has been formed to exploit the rubber industries of Siberia. Siberia contains over four million square miles, thousands of which are covered with dense forests, so it is obvious that large quantities of rubber will be found there if it is only looked for long enough.

The Company will take over and keep as long as it can all the cash it can possibly collect.

The first payments which will be made are the Directors' fees. These are very large, and are a first charge on the Company's assets, and are guaranteed by the Articles of Association.

The Company is acquiring and has entered into contracts to purchase all the interests, rights and titles of the Maldivian Golosh Company, the Brandypawnee Hot-water Bottle Company, the Baby's Comforter and Windsucker Company, all of which, being most flourishing concerns, are naturally anxious to dispose of their businesses.

The Company will acquire from these concerns all their stocks

of raw, boiled, chewed and stamped rubber, and will get rid of them without delay to the highest bidder.

The Tyre and Sidon Company, of which Sir M. T. Gasbags is a director, has agreed to buy all the rubber the Company produces, and as much more as it may require, from other people, at market rates, with 5 per cent. discount off for cash, and other deductions, commissions, brokerages, according to the customs of the trade. This is a most important asset and should be carefully noted.

Mr. Blakanwite, the eminent Dipsophilist, reports as follows:—"I have walked round the forests of Siberia for years, and have never been able to get into them owing to the toughness of the rubber bands. The waterways are, however, clear, and, if properly diluted, are very palatable. There are many varieties of rubber to be found in these forests if you look long enough. The following list gives the names of a few which occur to me on the spur of the moment: Heelia Bootia, Inkerasa, Goloshia Femina, Pensilmarkia Rubouta, Chewinguma, Jawbraka. There are also forty varieties which can be distinctly seen through the bottom of an ordinary tumbler, and if more tumblers are taken the number is often doubled.—A. BLAKANWITE."

Sir M. T. Gasbags writes:—"The population of Siberia is very large. If the Company will immediately plant 3,000 acres of land with a thousand trees to the acre, it would have, five minutes after the last tree was planted, 3,000,000 rubber trees."

All the Directors are shareholders in the Companies that are being acquired, and will exchange their shares for cash as soon as it comes in.

Applications for shares should be made as soon as possible, to enable the Directors to proceed to the allotment of their interests.

Do not write legibly. We want your cash, not your name.

No money will be returned, and all are invited to come in.

No reasonable offer refused.

THE MEXICAN "YELLOW TREE."

FOR the past year or two reports have come from Mexico of a tree lately discovered to be a rubber producer, and said to occur through a considerable upland region. Some small samples of gum said to have been obtained from this tree were sent from time to time to THE INDIA RUBBER WORLD office, but with little definite information regarding its source. Recently, however, there have been received a large sealed can of the latex and about 20 pounds of the coagulated gum. The latter in its physical appearance was much like ordinary resin that had been treated with resin oil. These samples were put into the hands of various experts for tests, the results of which appear below.

The first, from a rubber manufacturer and chemist is as follows:

This rubber can be used on the same lines as Pontianak gum. There is absolutely no comparison in regard to the higher grades of rubber such as Africans or even Accra flake. We have been able to obtain a very soft and elastic substance after coagulating and we have found that the rubber would remain in this state about 24 hours, and then become very hard and of no practical use as a rubber. We have found that it will not vulcanize by itself, but have found that it will vulcanize, that is to say, it will give us a product mixed with other rubbers and compounds which is marketable; the same of course being true with Pontianak gum. We have not been able as yet to use the product in the manufacture of rubber goods as the cost of producing is so much more than Pontianak and the results obtained but very little better.

Another report, from one who at first believed that the gum might have commercial value, is more comprehensive, and the investigator tried very hard to produce something of value out of the resin-like mass. This report runs:

"PALO AMARILLO" (YELLOW TREE).

[A Mexican tree designated as *Euphorbia elastica*. Now being studied as a possible producer of rubber.]

About one year ago we received a letter from a promoter of the sale of *Euphorbia elastica* trees in Mexico in which he stated that his chemist could produce from this gum, commonly known as "Potato gum," a rubber worth $1 per pound and promising samples. The samples never materialized.

On February 20, 1905, I received from another source a 5 gallon can of the latex *Euphorbia elastica* and some 20 pounds of the gum with the request that I would see what could be done with it in the way of making it commercially valuable. I accordingly conducted a series of experiments covering all the ground that I could regard as in the slightest degree as promising any good result from a chemical point of view and having the assistance in this work of a master in chemistry and an expert rubber manufacturer.

You will appreciate the rather unusual advantage we had in having the latex itself to work on. You will also appreciate the persistency with which I clung to the hope of finding something really good and specially useful in this gum when I state that I devoted a month to the investigation and carried it through a carefully considered series of submission to chemical reagents extending through 40 distinct experiments.

I take pleasure in reporting, at your request, the essential results of the investigation, briefly as follows:

1. Latex coagulates readily and completely by exposure to air, forming a gum fairly solid but very sticky.

2. No evidence of any tendency to fermentation of the latex, no matter how long the exposure to air. I call your special attention to this point of no fermentation for the reason that the latex of any true rubber is so far as I am aware particularly liable to fermentation proceeding rapidly to putrescence. In this freedom from ferments I find the first evidence that this gum is not a true rubber.

3. Latex contains about 60 per cent. water; that is, it dries down in open air to 40 per cent. solid gum.

4. The latex subjected to the solvent action of Carbon tetra chloride gives a remarkable reaction by separating in a test tube by gravity into five distinct strata, showing a remarkably complex composition.

5. I have preserved some of the latex exposed to the air in an open vessel for a year with no sign of putrescence or chemical change further than that produced by evaporation of some 60 per cent. of water and residue of gum.

6. I have on hand 40 samples representing the results of that number of experiments preserved for one year. Wherever the air has penetrated into these samples they have turned to a hard and brittle resin.

7. In all my experiments I have never found any decisive evidence that this latex is a rubber bearing substance.

Without in the least presuming to be able to render a conclusive verdict on this product I am still free to say that I now regard it as properly not a rubber but a resin.

Perhaps the best characterization of the value of the gum, or be it rather severe, and partly in fun, came from the head of a large rubber manufacturing concern, who is very alert in taking hold of new products. His report was: "As far as I can see, this gum is worth about 4 cents less than Pontianak." As Pontianak is to-day selling for about 3½ cents per pound, the gum would seem to be valued at minus one-half cent.

RUBBER PLANTING IN THE CONGO.

DETAILS of the planting of India-rubber in the Congo Free State with a view to offsetting the decline of the production from natural sources have appeared in THE INDIA RUBBER WORLD from time to time, with the expression of opinion that the results were less promising than in the case of rubber planting in some other countries, for the reason that (1) the suitability of rubber *lianes* or creepers for cultivation remains to be proved, and (2) the conditions of planting in general in the Congo state have not been developed to a stage comparable with what prevails in Ceylon or Mexico. Bearing upon this point Mr. George Bemelmans, of Ceylon, writes to the *Tropical Agriculturist:*

The rubber vines are planted in the forest cleared of jungle (underwood) at the rate of at least 2000 plants to the hectare (about 2½ acres). Many die out, and up to date no results have been obtained, although, as I stated above, the first vine rubbers were planted in 1899. Further, nothing proves that those creepers will be successful, as they are only a finger thick—notwithstanding their pretty good length. On the other hand, we must bear in mind that the nature of the rubber vines will never allow of the tapping methods suitable for the *Hevea*. Consequently Ceylon has still bright prospects before her!

We do not know who this writer may be or his means of being informed, but no information is forthcoming that would point to any other view of the matter. It is true that of late more attention is being given to the planting of *Funtumia* (*Kickxia*) *elastica*, a rubber tree which has been proved in German colonies to be well suited for cultivation, but an important point is whether the agents of trading companies who are planting rubber, not of their own volition but merely to comply with a state regulation, are likely to remain on the ground—after the native rubber resources have been exhausted—and give the newly planted trees the attention necessary for their development and ultimate productiveness. The condition in the Congo region as relates to the supply of native rubber is indicated by the fact that the imports from there at Antwerp have been declining so rapidly of late, although there is no indication of decreased activity on the part of the rubber trading companies in the collection of rubber. The Antwerp imports of Congo rubbers reached 5,417,456 pounds in 1901, and amounted in 1905 only to 4,442,607 pounds.

PLANTATION "RUBIO."

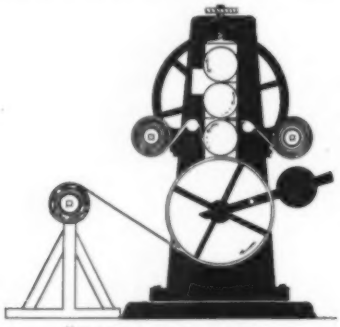
PLANTATION "Rubio," situated on one of the affluents of the Coatzacoalcos river in Mexico, is to-day probably the largest area of planted *Castilloa elastica* in the world, there being more than 2300 acres planted, containing approximately 2,750,000 trees. The illustrations on this page show two views, one of 1902 planting, as what is known as Camp Ojo de Agua. Here the trees are about 18 feet high on an average, and about 15 inches in circumference, 5 feet from the ground. The second picture shows a portion of the same territory, the planting being in the year following. The trees, which in the picture look like bushes, are really about 15 feet high and very thrifty. The foreground of the picture shows cleared land prepared for corn planting. Plantation "Rubio" is the property of The Tehuantepec Rubber Culture Co. (New York), a name many of the readers of this Journal are familiar with. This plantation is worthy of remark in being rubber alone, no coffee, cattle, gold mines, side crops or side issues being appended.

PLANTATION "RUBIO."
[Camp Ojo de Agua, Planting of 1902.]

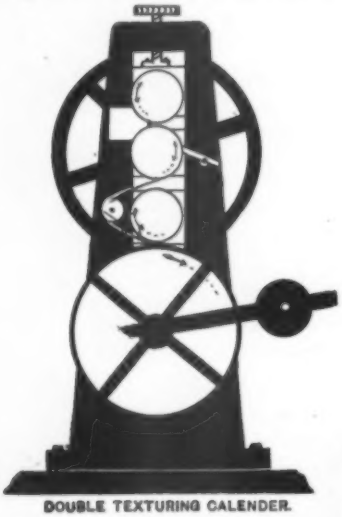
PLANTATION "RUBIO."
[1903 Planting; 1905 Clearing in Foreground.]

SOME NEW EXPERIMENTAL CALENDERS.

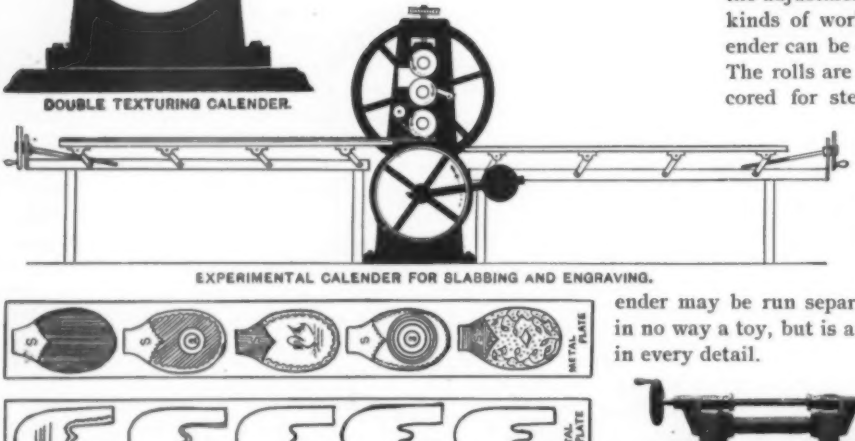
THE illustrations on this page show new types of calenders designed for experimental rubber work and also for practical use in smaller factories. One of the machines, for building up into a slab pure gum or compounded stock, would seem to be fairly important, as much of this work is done, and it is necessary to lay up the plys in such a way that they will be absolutely free from air. This slab building calender is fitted with a drum covered with soft vulcanized India-rubber, one half inch thick, the face being shellacked. By its use a slab can be built up to the thickness of 3 inches, the width being 22 inches and the length 6 feet. The designer expects it to be used for such work as heels, soles, valves, and articles are died out and made fit the mold with considerable exactness.



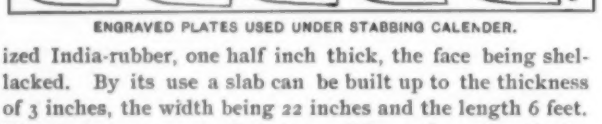
"THICK SLAB" CALENDER.

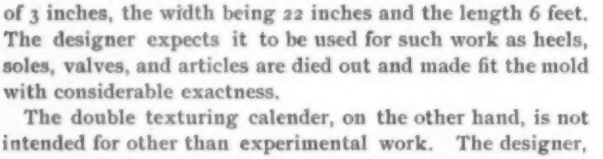


DOUBLE TEXTURING CALENDER.



EXPERIMENTAL CALENDER FOR SLABBING AND ENGRAVING.





ENGRAVED PLATES USED UNDER STABBING CALENDER.

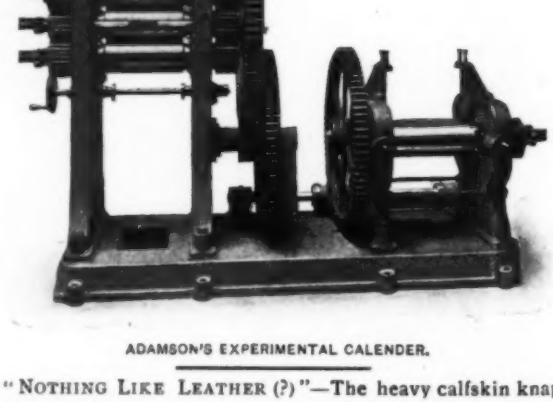
The double texturing calender, on the other hand, is not intended for other than experimental work. The designer, however, believes that he has brought out something that will result in a new method of double texturing on full s zed three roll calenders.

The third process demonstrated by an experimental machine is one for engraving and calendering stock flat, for water bottles, shoe uppers, soling, etc. This is done by running two ply compounded stock on long flat engraved metal plates, which are passed under the lower roll and over a soft rubber covered drum, the latter fitted with weights by the use of which considerable pressure can be exerted. In this process the designer advises the cooling of the stock on the plate for twenty-four hours before removing. This is, in the opinion of the writer, a distinct disadvantage where much work is to be done. Nor is it apparent that engraved flat surfaces, where the plates must be duplicated many times, are superior to engraved rolls when one figures economy of product. This type of calender is 6 × 14 inches, the pressure drum being 2 feet in diameter and placed directly under the bottom roll of the calender. A feature of it is the adjustable table on which the flat slabs are laid up.

An adaptation of this calender is its arrangement for laying up plys of stock for the manufacture of solid tires, and the designer claims that he secures much better results by this method than can be got from the tubing machine. However practical these machines may be, they are certainly interesting and ingenious, and are designed and built by Mr. Arthur C. Squires, Akron, Ohio.

* * *

ANOTHER experimental calender, and one indeed for accurate work where only small batches are used, is manufactured by A. Adamson (Akron, Ohio). The machine is excellently finished, the adjustment is absolutely accurate, and many kinds of work which can be done on a large calender can be done even better on this machine. The rolls are 6 × 14 inches, of chilled cast iron, cored for steam and water. The rolls run in bronze bearings, and are fitted with cast steel cut gears. The rolls of the mill are of the same size and are identical with the calender rolls. The entire machine is placed on one bed plate, and is so arranged that either mill or calender may be run separately or together. The machine is in no way a toy, but is a perfect working practical machine in every detail.



ADAMSON'S EXPERIMENTAL CALENDER.

"NOTHING LIKE LEATHER (?)"—The heavy calfskin knapsack formerly worn by the German soldier has been condemned by the War office and will be superseded by a light canvas article rubber coated. Another triumph for India-rubber!

CRUDE AND RECLAIMED RUBBERS.

WHAT measure of relief may be afforded from the unceasing stringency of prices for crude rubber by the conditions governing the market for reclaimed rubber is a question of considerable concern to manufacturers in general, whose resources have already been taxed, in the substitution wherever possible of reclaimed for crude, during the last two years or more that the soaring tendency of prices for the latter has tended to restrict its consumption. While the growth of both crude and reclaimed rubber has progressed hand in hand with the steady extension of the mechanical rubber goods production during recent years, the gain in consumption of reclaimed has been decidedly more than proportionate to that of crude.

Manufacturers have realized that the possibilities of a wider use for reclaimed rubber in their products offered the only solution of the problem presented, not only by the increase of the cost of crude, but also by the advance in duck, chemicals, etc. The finished articles could not be marketed at an advance commensurate with the increased cost of the raw materials, and unless the process of manufacture could be cheapened profits would be practically eliminated in many lines of goods. Meanwhile the reclaimers have resorted to every expedient to enhance the availability of their product, and with the broader fields thus established for its use, the improvement in quality has shown a consistent gain. Some rubber factories make their own reclaimed, and were perhaps in a position to realize more readily the practical application of such improvement to their various requirements than those factories dependent upon outside sources of supply.

Among the manufactured materials, certain molded goods have been found most susceptible to the addition of more recovered rubber. In lower grades of hose, belting, packings, and other supplies for mechanical needs there has been a substantial increase in reclaimed in connection with crude rubber. In the cheap grades of sheet packing the high price of crude rubber and the low selling value of the finished product have combined to render the use of anything but reclaimed partially out of the question. With the steady gain in the consumption of reclaimed rubber, not only with the growth of established industries but with the creation of new lines and wider applications for rubber in general, the effect of this condition upon values for crude cannot be doubted. But for the possibilities of reclaimed it has been stated that prices for raw rubber might before now have touched a prohibitive basis.

Old boots and shoes in the past have furnished the great proportion of scrap for reclaimed, the returns from this source being estimated, at one time, at 90 per cent. of all scrap. But nowadays many other forms of waste rubber are being utilized to advantage by the reclaimers, including the various grades of tire stock, the volume of which is becoming enormous, and from which excellent results are being attained under some processes of reclaiming. If any serious check should be encountered in the supply of old shoes, manufacturers believe that the force of the situation would stimulate other sources of supply to help make up for any deficiency in reclaimed. The occasion is regarded as favorable for an increasing application of reclaimed, and there can be no doubt as to its continued influence in checking the advance in crude rubber prices.

To sum up, the continual rise in the price of raw rubber has been an incentive to manufacturers to experiment more fully with reclaimed, by reason of which it is now utilized to advantage in places for which it was formerly thought unfitted. At the same time, there has been a gradual improvement in reclaimed rubbers, which has further tended to their introduction. As a result, the pressure of the demand for raw rubber has been moderated, with the result of keeping down the price somewhat.

One prominent reclaimer, in view of these facts, predicts that fine Pará rubber will be selling at $1.10 within a year, but he always was an optimist. He is convinced, by the way, that even if crude prices should drop materially the newer uses of reclaimed which have developed recently would continue, on account of the satisfaction of manufacturers with the results. It may be pointed out that the present open winter in the United States, indicating a reduced sale of rubber footwear, may be the cause of a lessened collection of discarded boots and shoes next spring, after the snow disappears.

A FRENCH DOCTOR ON RUBBER FOOTWEAR.

IN a report on "Pneumonia and Colds," which the French Professor Dr. Bruet recently made before an audience consisting of scientists and students in the Paris School of Medicine, he closed with a few words on the rubber shoe question. A translation of the remarks by the famous health specialist is derived from the *Gummi-Zeitung*:

"And now, my honored listeners, I shall speak upon a subject which absolutely demands investigation, however trivial it may seem to many—I mean that the cause of so much taking cold, especially in the case of debilitated and nervous persons, and particularly in raw, unsettled weather, is generally the result of wearing light, flimsy footwear. When one considers how easily a susceptible, delicate constitution is affected by any change in temperature on the feet, and how quickly the resulting uneasiness spreads through the whole body, he can better appreciate why doctors advise their patients, and delicate people generally, to be very prudent in the choice of their footwear. In wet weather it is only too easy for persons so predisposed to contract severe colds, with the consequences of which, gentlemen, we physicians are thoroughly familiar. The public generally should be very careful to keep their feet warm in bad weather, and, when possible, to wear overshoes or rubber shoes, of which there is far too little use, particularly in the large cities, where one's health is most liable to attack, with the accompanying expense and loss of time."

AN interesting incident is reported to the Diamond Rubber Co. (Akron, Ohio), by Dr. A. C. Helm, an automobilist of Milwaukee. After one of his "Diamond" tires had been used several months he noticed that it was showing signs of a puncture from the inside, and that at a certain place the surface was being pressed outwards. Looking inside he found between the air tube and the cover a lever such as is used to remove and put on tires. It was a piece of steel an inch wide, ⅛ inch thick and 12 inches long, and had been dropped into the tire by Dr. Helm's chauffeur when he placed it on the rim six months before. This certainly is a severe test of the wearing qualities of a tire.

RUBBER COVERED SIGNAL WIRE.

WITH a view to increasing efficiency, and decreasing the high casualty rate and the enormous money losses involved, the Railway Signal Association—an American organization—is laboring earnestly to secure a higher degree of quality in the rubber covered wires used in the various railway signal systems now in operation. At the annual meeting of the association at Niagara Falls, on October 10-12, 1905, a special committee that had made an investigation of the subject made a report that was of importance, its reading being followed by an interesting discussion. By the way, there were 215 members present and 82 new members were elected. Nearly every important railroad and battery, signal manufacturing company in the United States was represented.

The committee, after remarking generally upon the forces that affect the life and efficiency of signal wires, said that all railroad signal systems are supposed to be so designed that the failure of any part would cause the display of a stop indication, and so be a factor on the side of safety; all signal failures are dangerous because they frequently lead to reckless running, and reckless running often means disaster. For these reasons it was unsafe and wasteful to use any but the best signal apparatus and material available. The report expresses regret that in the absence of rigid specifications signal companies are often tempted to supply cheaper grades of material to enable them to underbid competitors, using rubber covered wire the insulation of which, while of good quality, is so thin as to be unsuitable. The usefulness of such wire is soon destroyed, but much mischief is apt to be wrought before the deterioration is discovered and new wire installed.

There is no manufactured product in which the buyer puts himself so thoroughly in the hands of the manufacturer as in rubber covered wires and cables, says the committee; the manufacturers have shrouded the subject with much mystery, yet it cannot be denied that the purchaser is entitled to know exactly what he has paid for. Speaking of rubber insulation in detail, the committee believes the vulcanized rubber compound must consist of not less than 30 per cent. of the best grade of fine Pará, mixed with sulphur and dry inorganic mineral matter only. Various methods were given for testing rubber covered wires for the purpose of determining just what the insulation is, and for showing how to detect defective or inadequate insulation. The manufacturer should provide at his factory all apparatus and other facilities for making the required physical, chemical, and electrical tests.

President Morrison asked the wire manufacturers present if they could comply with the specifications based on the report. Mr. E. Morss, of the Simplex Electric Co., replied that speaking for his own and three other companies, he could not conform exactly to the specifications.

Mr. A. Ames, Jr., chairman of the special committee and signal engineer of the Lake Shore and Michigan Southern railroad, said he was using wire manufactured by a number of companies and all of it fully met the specifications called for in the report of the committee. He believed the manufacturers present should say what in detail was the matter with the specifications suggested, and tell why they could not meet them.

Mr. Morss replied that by using more than 30 per cent. of rubber he could meet the requirements; when he first spoke he had been thinking of a compound containing just 30 per cent. rubber and 70 per cent. dry mineral, and sulphur only. He considered such a compound a poor one from an insulation standpoint. Other manufacturers he knew regarded as unsuited for the purpose and feared, on the question of life. If the 70 per cent. dry mineral clause was dropped the whole problem would be changed and become comparatively easy of solution. He was willing to give a 30 per cent. rubber compound if allowed to mix it as seemed to him best. Mr. Morss objected to Mr. Ames's specification regarding physical requirements and suggested a number of tests that were different from those suggested by Mr. Ames.

The suggestions of the committee were generally favored, the very few dissenters comprising those who, while they did not object to the 30 per cent. pure Pará clause, did want to reserve the right to mix the remaining 70 per cent. of the component parts of the insulating compound according to their own ideas.

Mr. J. E. Ham, of the Hazard Manufacturing Co., thought the specifications called for in Mr. Ames's report were all right in a general sense, but he would recommend that they be amended so as to permit the introduction of a small proportion of ingredients other than dry mineral matter. The report was finally adopted in its entirety as a "report of progress."

BRITISH CABLE MAKERS' ASSOCIATION.

THE following circular has been issued:

"As some considerable amount of misapprehension seems to have been created in the minds of electric cable users as to the objects and aims of the Cable Makers' Association as now constituted, we desire to state exactly what the present position of the association is. Some seven years ago the leading cable makers decided that, unless steps were taken to remedy the matter, the quality of the V. I. R. [vulcanized India-rubber] cables sold must ultimately deteriorate owing in great part to keen competition, and to prevent this they agreed amongst themselves to adopt as a minimum the competitive prices then prevailing, and to compete only in quality. To facilitate trade, and to protect the user, the cables of the three grades then most in use were standardized both as regards the weights and resistances of the copper conductors, the thickness of dielectric, and the protecting coverings over all. It was further decided that for these grades only the best rubber should be used, the quantity to be varied according to the grade, and the necessary ingredients added according to the experience of each manufacturer.

"Until recently only these association grades were made by the members of the association. Lately, however, a lower class of cable has been adopted by some users, and they have pointed out to members of the Cable Makers' Association that there is a real and legitimate demand for such cables for certain purposes, and that engineers and contractors would be glad to purchase in certain cases this lower class of cable from houses of good experience and repute who had hitherto abstained from selling any goods other than those of the high standard they had set up. As an outcome of these representations some of the members of the Cable Makers' Association placed on the market a lower class under the name of non-

association cables, in the belief that, although admittedly the quality was lower, they should secure these special orders owing to their long experience in manufacture and their technical skill. This action and the recognition by engineers and contractors of the advantages of buying from makers of the highest standing has led those makers whose trade existed on the basis of low price alone to misrepresent the motives of the Cable Makers' Association.

"Having thus officially explained our position, we suggest that where cables of the best grades are required, engineers should specify association grades made by a member of the Cable Makers' Association, but in case where an inferior class can be used, we believe the buyers will get the best value for his money by ordering non-association class from a member of this association. In order to prevent misunderstanding, the two classes have distinctive labels attached to the coils. Association cables have, under the canvas wrapping a yellow label, stating the class of cable and also its electrical particulars. This label is tied round each coil by a tape secured by a lead seal. The tape and seal must be broken before the coil can be unwound. Non-association cables have a green label giving similar particulars, which is attached to each coil in the same way. Outside the canvas wrapping each coil has an ordinary tag label—either yellow or green as the case may be—giving manufacturer's name and address and class of cable.

"THE ANCHOR CABLE CO., LTD.
"THE BRITISH INSULATED & HELSEY CABLES, LTD.
"CALLENDER'S CABLE & CONSTRUCTION CO., LTD.
"CONNOLLY BROS., LTD.
"W. T. GLOVER & CO., LTD.
"W. T. HENLEY'S TELEGRAPH WORKS CO., LTD.
"THE INDIA-RUBBER, GUTTA-PERCHA & TELEGRAPH WORKS CO., LTD.
"THE LONDON ELECTRIC WIRE CO., LTD.
"SIEMENS BROS. & CO., LTD.
"THE WESTERN ELECTRIC CO."

NEW HOME OF THE "SIRDAR" TIRE.

FROM England Mr. J. M. MacLulich, managing director of The Sirdar Rubber Co., Limited, writes to the Editor of THE INDIA RUBBER WORLD the following breezy description of their new works at Limpley Stoke:

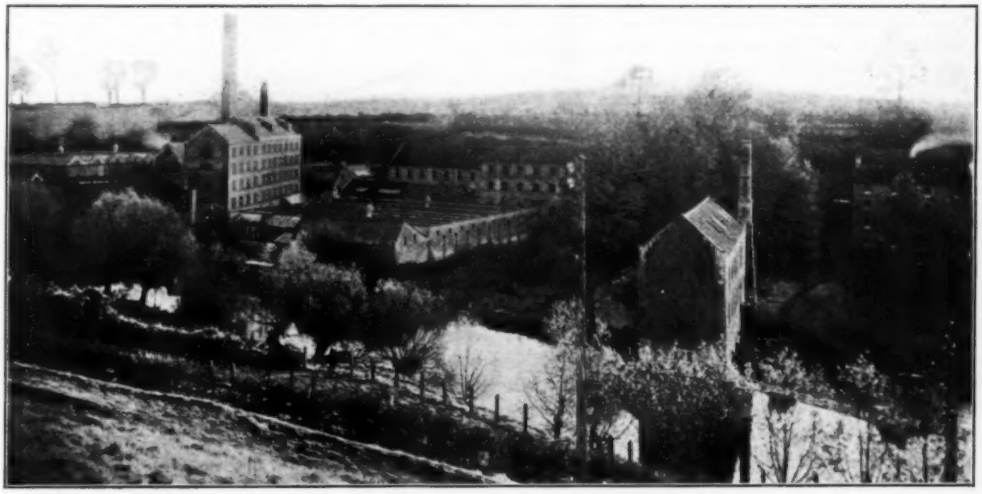
"And now for a few facts about the new mill. We are doing it in regular American style; we don't get possession of the buildings until January 14, yet the machinists have delivered and are erecting a train load of machinery, and the majority of the foundations are in. The buildings are all built of the best Bath stone, and the floor space is about 100,000 square feet; there are three independent sets of engines and small water power (about 45 HP.) which is very acceptable, as it is so cheap and constant.

"We are right in the middle of a coal district, and can get coal delivered to the mill under 10 shillings a ton; we have a canal close by, and two railway services with good connections to the Midlands and to London, the train taking only about two hours. For shipping we are very central, being within easy distance of Southampton, London, or Bristol, and labor and living is cheap in West Wiltshire.

"The old mills, even through the dead season, are working all day and night, with two shifts; and I anticipate before a fortnight expires, after our taking possession of the new mills, we shall have a large portion of the new machinery erected and working. So you see you have not got it all your own way in America; we can do things quickly here if things are set about in the right way; yet I must say I do admire the quick way in which our cousins across the Atlantic move in business."

The Sirdar Rubber Co., Limited, are justly pleased with a letter received from the Star Omnibus Co., Limited, of London, who are operating motor buses, which says, in substance, that Sirdar tires supplied for their double deck omnibuses have proved so satisfactory that the company have decided to contract to supply the whole of their buses with Sirdars for the next year. Besides the buses now running they will need 25 additional ones by the end of February, with more to follow. They look forward to a very large expansion of the motor bus service.

CHARLES MACINTOSH & CO., Limited, have in their offices at Manchester a great curiosity in the shape of a beautiful carved statue of a Crusader that probably no money could buy. One of their workmen becoming impressed with a picture, took a block of hard rubber and from it carved the statue which is in every way a most beautiful and artistic piece of work. The lines are perfect; the expression of lofty resolve on the face of the warrior zealot, the armor, the huge sword with its hilt made in the shape of a cross, speak eloquently for the genius of the man who was, after all, through life only an humble rubber worker.



NEW FACTORY OF THE SIRDAR RUBBER CO.

THE SLOGAN OF THE M. R. M. A.

SHERRY'S beautiful banquet hall, in New York, decked with flowers and palms and its center occupied by an oval table with covers laid for fifty diners, the center of the table a mass of lilies, was the sight that greeted the members of The Mechanical Rubber Manufacturers' Association of the United States on the evening of January 18. There were not quite fifty present, but those who gathered were full of the spirit of brotherly love, and both at the informal reception which preceded the dinner and at the table, allowed this spirit full scope. It had been expressly provided that the occasion was to be free from speech making and the result was almost everybody spoke, very informally to be sure, but very well. At the close of the dinner, the president, Bertram G. Work, arose and briefly reviewed the history of the Association, describing vividly what it had accomplished in eliminating all of the abuses incident to the trade that it represented. He did this so seriously that the listeners did not at first catch the vein of delightful sarcasm which ran through the speech, and it was only when he presented the resignation of all the officers and announced the dissolution of the Association, that the crowd awoke.

It was then that they began to appreciate the full meaning of the illustrations on the front page of the menu, and when they had fairly grasped this then came the final death blow to the Society in the shape of a beautiful souvenir knife, one of Reed & Barton's most artistic productions, on the handle of which was engraved, "SLOGAN OF M. R. M. A." Immediately following the Association's demise, came the "wake," in which many speakers took part. Among them were Welling G. Sickel, William H. Hillman, Ernest F. Hopkinson, H. E. Raymond, James Boyd, Henry C. Pearson, Herbert W. Du Puy, C. A. Daniel, H. F. Hering, Wilmer Dunbar, J. J. Voorhees, Jr., and others. The thought that ran through most of the speeches was that if the Association had failed in everything else, it had been successful in engendering the spirit of good fellowship among its members.

The exercises were much enlivened by the presence of a fine orchestra and a quartette of colored vocalists, who rendered "coon songs" with a perfection rarely equalled. From a business standpoint the finish of the Association was most complete, all the money in the Treasury going for the banquet and nothing remaining for *post mortems*. Ex-President Work paid Ex Secretary Hillman a handsome compliment, stating that he had done most of the work, and exceedingly well.

One point in Mr. Work's speech is worth emphasis. It had been whispered about that he had evolved a plan under which all could work without violating in the least any obligations. The audience were therefore on the *qui vive* to hear the solution of their troubles. This, perhaps, was the reason that they were so slow to catch on to the truth that the end of the Association was in sight. And so firmly was this thought in their minds that it was not until the speaker, in plain English, or as H. E. Raymond wittily said, "with much grace of *bene*diction" plainly announced the end, that they understood.

FRONT OF MENU (MOURNING BORDER ADDED).

MENU

Martini
Les Hors D'Oeuvres A La Pascal *Cocktails*
Huitres Cape Cods
Consommé De Tortue Verte
Marqereau Espagnole Sur Planche *Chateaux*
Sauce Moutarde Concombres *Carbonnieux*
Selle D'agneau De Printemps
Pommez Hollandaise Champignons Au Beurre Lie
Terrapin Maryland
Sorbet
Pintarde Roti *Pommery*
Salade Romaine et Chives *1900*
Glace Fantaisie *White Rock*
Fruit Fromage
Café
Cigars and Cigarettes *Liqueuers*

Sherry's
Le 18 Janvier, 1906

TIRES AT THE NEW YORK AUTOMOBILE SHOWS.

NEW YORK has lately seen two automobile shows, each larger and better than the single show held for five years past at Madison Square Garden. The two shows really made but one, so far as the public went, since the two were less than a block apart, and the street exhibits actually made it all continuous. And instead of being a "national" show, as one of the exhibitions was officially termed, the whole might properly have been called an international show, on account of the number of French, German, and English exhibits of both automobiles and accessories. The attendance throughout the week January 13-20 inclusive, was sufficient testimony to the great hold which automobiling has taken upon American life, in its social and commercial aspects.

Even a cursory review of the shows as a whole is out of question in the space available here. Neither a catalogue of the automobile exhibits can be given nor a description of the decorations, both in the Madison Square Garden and the new and beautiful Sixty-ninth Regiment Armory, which presented a more artistic aspect than had been seen before at an automobile show in America.

The reason for two shows, primarily, was that Madison Square Garden, which had been shared in past exibitions by all the motor car interests, was secured for this year by the Association of Licensed Automobile manufacturers, composed of the makers of automobiles under the Selden patents. The Automobile Club of America, therefore, repaired to the new Armory building, where, with the active help of the American Motor Car Manufacturers Asssociation—manufacturers who refuse to recognize the Selden patent—was organized a show second in neither attractiveness nor attendance to that which the public had been accustomed to visit at the Garden.

The number of automobile tire manufacturers exhibiting was greater than ever before. More American rubber firms have taken on their production, and the number of foreign makes offered in this market has increased. Naturally novelties are pushed strongly to the front, and a detailed report of the shows would necessarily give to some of these novelties a prominence out of proportion to their commercial importance. The one dominant feature, however, was the prevalence of the "clincher" detachable type of tire for all but commercial vehicles, and it was hard to find a tire of any type that would not fit the "clincher" rim.

The second impressive fact was the dread of punctures and skidding, as shown in the vast number of casings and treads, designed to prevent these mishaps. In the matter of treads the Bailey and the "Samson" types are the standards to which the others approximate more or less closely. The Bailey, an American patent, is a rubber tread with round projections or studs of rubber rising from the surface, designed to get a better grip on the ground, to lessen the danger of punctures, and to lengthen the life of the tire. The "Samson," a French invention, consists of a leather casing, fitting any tire, and a leather strap atop, riveted to the casing, and bearing rolls of round steel studs. The leather casing is vulcanized to the tire shoe.

The same dread of punctures has also brought about a certain recrudescence to the old solid and cushion types with various modifications. These were mostly found at the Armory and attracted considerable attention from people who are willing to forego some resiliency for the sake of certainty in getting there and back. Single tube or hose pipe tires are still shown by several important companies, though these are practically obsolete.

"Single tube," by the way, is so seldom heard, that its counterpart "double tube" is a misleading term, suggesting a particular device like that shown by the Diamond company, rather than the prevalent type of pneumatic. The term "detachable tire" has also taken on a special significance, meaning a tire which is removed by taking off one of the rim flanges, which hold it on. Quite a number of these were shown, designed to make repairs easy. A tendency exactly opposite to the "detachable" feature is shown by the increased use of other devices to make the tire *stay on*, regardless of punctures and skids. To high speeders this seems to be the all important point. The tendency of all car drivers who want speed on easy riding is to run on soft tires, while all tire makers urge that they be blown tight. Running on loose tires tends to crack the sides of the tire, which tendency is largely offset by a shape which will distribute this strain, and by regulating the relative thickness of the rubber on the sides and tread. Hence it was noticeable that all clincher tires are pretty much the same in section — that is circular instead of ∩ shaped as last year.

With one or two exceptions the tire exhibits were duplicated in the two shows, so that in the details which follow it will not be necessary to specify where the tires were seen. And most of the exhibits, on the closing night, were started for Chicago, for the great automobile show in progress there, at the Colosseum as these pages go to press.

THE TIRES IN DETAIL.

AMAZON RUBBER CO. (Jamestown, N. Y.) showed a motor tire of the clincher type, in the exhibit of the E. J. Willis Co. (New York), dealers in motor supplies.

CONSOLIDATED RUBBER TIRE CO. (New York) showed the Kelly-Springfield endless solid tires, a feature of which is V shaped retaining rings, wrapped spirally with canvas to which the rubber vulcanizes; the rings are inserted in the base of the rubber and, bearing directly on the band of the wheel, eliminate internal friction. Also, single tube vehicle tires.

REPRESENTATIVES: Van Cartwell, president; Frederick A. Seaman, secretary; E S. Roberts, New York branch manager; F. A. Oatman, New York and New Jersey traveler; F. E. Holcomb, southern representative; E. Kissell, Philadelphia representative.

THE DIAMOND RUBBER CO. (Akron, Ohio) showed their "Diamond clincher," which this year is practically round in tread. In the way of novelties was a flat tread pneumatic tire, otherwise of the regular Diamond construction, and a "diaphragm" tube, which really is one tube within another; if the regulation tube is punctured, the interior or emergency tube can be inflated without removal of the tire, by means of a separate valve. In addition to the Bailey tread, the Diamond showed a steel studded anti-skidding

tread of their own. They have a new "anti-friction" solid tire, having a wire mesh base, besides which they make the Firestone side wire tire. The "Burnham" tire protector is a heavy shoe of rubber and fabric, resembling an ordinary tire cover without beaded edges, to be placed over and around a worn tire. Their exhibit included also the Marsh rim for automobiles, which is of the detachable flange type, and has been described in THE INDIA RUBBER WORLD as the "Bryant" rim.

REPRESENTATIVES.—W. B. Miller, secretary; O. J. Woodard, factory representative. Branch managers: Harvey Woodard and J. W. Hobbs, New York; O. S. Tweedy, Chicago; E. H. Fitch, Philadelphia; W. T. Helfer, Boston; W. M. Perrett, Detroit; N. E. Oliver, Buffalo; G. J. Bradley, Cleveland. Salesmen: B. W. Snowman, T. Appleton, G. A. Davidson and D. W. Miller, New York: Joseph Bennett, Philadelphia; W. P. Cronin, Boston; J. F. Lanier, representing the Burnham tread.

ELECTRIC RUBBER MANUFACTURING CO. (Rutherford, N. J.), a new concern, showed "Panther" auto tires made on the clincher pattern, "Panther" stockinette covered inner tubes, and solid tires invented by A. Dewes.

(REPRESENTATIVES.—James H. George, president; A. Dewes, patentee; H. A. Middleton, factory superintendent; D. D. Martin, New York branch manager; John Graham and Mr. Eaton, salesmen.

FIRESTONE TIRE AND RUBBER CO. (Akron, Ohio) showed their standard side wire tire, for automobiles and commercial wagons, there being specimens wider than any before shown. They showed also the "Firestone" mechanically fastened pneumatic tire. This differs in form from tires of the "clincher" type, being held in place by flanges bolted through the felloe, though a special wheel is not required.

REPRESENTATIVES.—H. S. Firestone, president; S. C. Carkhuff, secretary: J. M. Gilbert, general sales manager. Branch managers: W. P. Berrien, and W. W. Wells, New York; R. J. Firestone, Chicago; A. J. Greene, Boston; E. E. McMasters, Detroit. Salesmen: A. G. Partridge, general salesman, Akron; Harry Esterly, T. J. Glenn, H. A. Palmer, T. B. Talbott.

THE FISK RUBBER CO. (Chicopee Falls, Massachusetts) showed their mechanically fastened detachable tire in three types: the "molded type," the "heavy car type," and the one with a Bailey tread. The molded type is egg-shaped in section, and has no breaker strip. The heavy car type has a round section, with a thicker tread and a breaker strip, the tread being attached by a second vulcanization. The fabric is also made much stronger, and attention is called to the cushion of soft rubber under the tread. The Bailey tread tire shows a round section. They also furnish red inner tubes.

REPRESENTATIVES.—H. T. Dunn, president; E. H. Broadwell and Frank C. Riggs, vice presidents; H. G. Fisk, secretary; A. N. Mayo, treasurer; J. C. Cole, superintendent; E. H. Brandt, factory representative. Branch managers; J. W. Bowman, New York; Geo. Campbell, Boston; Morris Penrose, Philadelphia: B. H. Pratt, Chicago; W. J. Lambe, Detroit; E. A. Hoffman, Buffalo; F. C. Vanderhoof, Cleveland. Salesmen: J. W. Meixell, B. D. Meixell, J. H. Cody and Fred Ayers.

THE G & J TIRE CO. (Indianapolis, Indiana) showed their standard "G & J tire," which this year is not molded, but wrapped and cured in open steam in one piece. They have changed the fabric filler of the bead core for one of hard rubber. All their tires have inside flaps to prevent pinching, and Bailey's "Won't Slip" treads are furnished when desired. They also offer the Dunlop, but only in smooth treads.

REPRESENTATIVES.—H. O. Smith, president; C. H. Semple, secretary; H. A. Githens, general factory representative; Arthur Smith, New York representative; W. G. Whitlock, Middle States representative. Branch managers: A. E. Vinton, Cleveland; H. L. Johnson, Boston; Byron Dowse, Chicago; R. Leedjams, San Francisco; H. A. Smith, Buffalo agent; D. B. Price, New England, salesman; V. M. Scroggs, Cleveland salesman.

THE B. F. GOODRICH CO. (Akron Ohio) showed their standard "Goodrich clincher" more nearly circular in cross section than hitherto, in connection with a new rim, with a detachable flange, the merit of which is that it facilitates the application and removal of the tire—a most desirable consideration where prompt repairs are necessary. The new feature will be more fully described in another place. It is pointed out that the greater ease with which the tire may removed in no sense lessens its safety. The exhibit again included the Firestone side wire solid tire, which the company make under royalty and Bailey's "Won't Slip" tread.

REPRESENTATIVES.—H. E. Raymond, general sales manager; A. J. Wills, manager tire department. Branch mangers: F. Y. Stewart, New York; J. W. Lyman, Philadelphia; H. E. Limerick, Boston; W. O. Rutherford, Buffalo; C. H. C. Miller, Detroit; O. R. Cook, general representative; Edward Bonham, New York city representative. Salesmen. A. F. Scholer and W. H. Hart, New York; W. H. Whitenack, Brooklyn; H. B. Niblette; C. E. Tremmel, Albany; W. J. Burns, Bridgeport, Conn.; C. H. Sutherland, Hartford.

THE GOODYEAR TIRE AND RUBBER CO. (Akron, Ohio) showed their "Goodyear clincher," and the Universal rim, which latter appeared for the first time at last year's shows. Their special novelty is the "riveted fabric," of which their tires are made. The threads of this fabric are not woven, but "laid," so that square openings are left at regular intervals, through which the layers of rubber come into actual contact, thus producing the "riveted" effect. The canvas plies are also laid in "on the bias," to give greater elasticity, and so that the threads will be best placed to stand the running strain, which they claim is in a direction diagonal with the circumference of the tire. They also showed the "Heine" tread, designed to be skid proof, being made of rubber with cupped steel buttons set in depressions in the tread.

REPRESENTATIVES.—F. A. Seiberling, general manager; C. W. Seiberling; secretary and treasurer; G. M. Stadelman, manager vehicle tire department, Branch managers: K. B. Howard, New York; William Teagan, Boston; W. B. Fewell, Buffalo; O. L. Weaver, Cincinnati; A. F. Osterloh, Chicago. Salesmen; H. G. Fitler, Philadelphia; M. M. Norton, middle west; Mr. Penniman, Boston.

THE HARTFORD RUBBER WORKS CO. (Hartford Connecticut) showed their standard "Hartford Clincher," with certain changes. The fabric is much stronger, the bead is encased in asbestos to prevent rim cutting, and a strip of pure gum is also placed between the fabric and the rubber cover proper, running up over the breaker strip, also. The whole tire is cured at once, in the exact shape which it will assume when in service. This one-cure process, it is pointed out, relieves the tension on the fabric, and offsets any tendency to split. In the "Hartford Dunlop," also vulcanized entire at one operation, the fabric is 40 per cent. stronger than before. The principal novelty in this exhibit was "Universal rim," and the "Floating ring." Last year's detachable flange, which was hollow and elliptical in section, has been pressed in, on one side, so that when reversed it will also hold a clincher. The channel in which the flange rests has also been deepened, and has been cut out at one point to allow the turnbuckle to protrude slightly. The floating ring is entirely new, being an endless band of light, galvanized metal which rests upon the rim, and whose sides spread out the edges of the tire against the flanges. It also fills the space between the edges of the tire, making the air chamber perfectly round, thus preventing pinching, as well as serving as an endless lug, and preventing pinching. The Hartford company also showed their Turner endless solid tire, in which the fabric around the wires has been thickened.

REPRESENTATIVES.—J. D. Anderson and Thomas Midgley, vice presidents; J. W. Gilson, secretary and treasurer; M. H. Plow, assistant secretary; Branch managers: E. S. Benson, New York; E. R. Benson, Boston; E. S. Row, New York; S. E. Gillard, Chicago; F. Kesser, Philadelphia; George Ostendorf, Buffalo; H. R. Anderson, Cleveland; H. E. Field, Detroit; A. O. Holroyd, manager Hartford Dunlop department. Salesmen: H. F. Snyder, New York; W.

R. Barnes, Philadelphia; A. D. Cluden, New Jersey; W. C Holmes, New York; R. H. La Porte, Pennsylvania; A. W. Kirk, southern states; Richard Cluuen, New England; H. Severance, western states; E. J. Dovern, solid truck tires; D. Shattuck, southern representative; W. H. Bell, New York; W. H. Reed, truck tires; C. H Harbridge, western states.

INTERNATIONAL A. & V. TIRE CO. (Milltown, New Jersey) had an exhibit, the principal feature of which was the "International (Fox brand)" motor tire, made in G & J pattern. They also showed Fox brand tubes separately, in making which there is a reinforcement of the inner or lower circumference.

REPRESENTATIVES.—J. C. Matlack, president; R. S. Ireland and Mr. Tansy, general representatives; Frederic Suhr and Mr. Fisk, eastern representatives W. H. Dougherty and C. R. Van Auken, western representatives; T. A. Bruen and J. W. O'Mara, northwestern representatives.

THE MILWAUKEE RUBBER WORKS CO. (Cudahy, Wisconsin) showed their principal tire product, the Fawkes airless non puncturable motor, which, while retaining all the original features, is now adapted to the clincher rim.

REPRESENTATIVES—John MacMillan, general manager; F. P. Johnston, New York. branch manager.

MITCHELL PUNCTURELESS PNEUMATIC TIRE CO. (Swampcott, Mass.) showed a new tire which comprises a pneumatic tube lying in a deep channel rim, between which and the heavy outer tread are ranged a succession of rubber "legs." Wheels so equipped have a neat appearance, and a full measure of resiliency is claimed, with no danger of punctures.

REPRESENTATIVES:—M. L. Derrick, president; W. R S. Hall, vice president; H. W Howard, secretary; O. R. Witter and W. S. Haliburton, directors.

MORGAN & WRIGHT (Chicago) again showed their clincher tires, involving the results of experiments during the past year, as shown in a materially stronger fabric. This applies likewise to the Dunlop tire, which they exhibited this year for the second time.

REPRESENTATIVES.—C. J. Butler, president; A. I. Philp, general sales manager; W. C. Marion, general eastern representative; J. C. Weston, general western representative. Branch managers: G. S. Shugart, New York; A. Measure, Boston; R. C. Kennedy, Cleveland; E. F. Jackson, western representative; T. R. Burton, New York; state salesmen: J. E. McCarthy and G. C. Gaillard, New York city salesmen; E. M, Greene, east Pennsylvania salesman; J. J. Alexander, Illinois salesman.

THE MOTZ CLINCHER TIRE AND RUBBER CO. (Akron, Ohio) were represented by their Motz cushion and solid motor tires, fitted to clincher rims, shown by their New York agents, The Republic Rubber Tire and Shoe Co. The latter concern, of which Frederick E. McEwen is manager, makes a specialty of tire repairing, and exhibited the "Hercules" non skid leather covers; also tire repair outfits.

PENNSYLVANIA RUBBER CO. (Jeannette, Pa.) showed "Pennsylvania" wrapped tread clincher tires, in standard shapes, and also the "Pennsylvania" racing type, the latter being similar in construction to the former, except for a flat corrugated tread.

REPRESENTATIVES.—F. A. Wilcox, vice president and general manager; H. W, Du Puy, treasurer; G. W. Shively, secretary; A. M. Jotaleman, manager solid tire department; F. W. Walters, manager bicycle tire department; Branch managers: F. P. Hayes, New York; A. G. Clark, Boston; W. T. Walker, general salesman; Wilmer Dunbar, factory salesman; Warrington McCullough, Philadelphia salesman; Henry Goodman, New York salesman; Mr. Whitmore, New York automobile salesman.

HARBURG TIRE CO. (New York) are North American agents for the Harburg and Vienna India-Rubber Co., of Germany, who are entering this market for the first time. They exhibited the "Harburg" automobile tire, made on the clincher principle.

REPRESENTATIVES.—R. L. Kingston, general manager; P. L. Barry, George Lamberty.

ST. JOHN RUBBER TIRE CO. (New York) exhibited sets of their solid rubber cushioned tire, mounted respectively on an automobile and a bicycle.

THE SWINEHART CLINCHER TIRE AND RUBBER CO. (Akron, Ohio) showed their standard solid rubber tire, which is fitted to a "clincher" rim and further held in place by means of cross wires, the ends of which are engaged by the converging flanges of the rim. Besides the tire as originally made, the exhibit embraced new models.

REPRESENTATIVES.—J. A. Swinehart, president; B. C. Swinehart, general sales manager; E. O. Hoopengarner, New York branch manager. Agents: E. S. Aker, Brooklyn; R. A. Brine, New England; Mr. Berrodin, Philadelphia; R. D. Schaum, Washington; Mr. Streebe, Philadelphia salesman.

VOORHEES RUBBER MANUFACTURING CO. (Jersey City, N. J.) appeared for the first time as exhibitors at an automobile show. They make an automobile cushion tire, designed to obviate all annoyance or danger from puncture; also tire repair outfits, and an extensive line of rubber mats for motor cars.

REPRESENTATIVES.—John J. Voorhees, president; J. J. Voorhees, Jr., vice president and treasurer; John Caldwell, and John Caldwell, Jr., representatives tire department; G. F. Covell, sales manager.

THE FOREIGN TIRES.

THE CONTINENTAL CAOUTCHOUC CO. (New York), the American representatives of the German firm of the same name, exhibited their tires with smooth and corrugated treads; the Samson leather tire on Continental "carcasses"; and various accessories, rubber and otherwise, for the care or repair of tires.

REPRESENTATIVES.—Emil Grossman, general manager; Joseph Grossman. Branch managers: E. H. Fahy, Boston; D. T. Keenan, Buffalo; Mr. Hawley, Detroit; F. M. Harris, Buffalo; E. T. Horsey, Cleveland. Representatives: W. A. Rutz and R W. Spring, New England; W. W. Weller, Buffalo; F. G. Hill and E. S Brower, New York; J. O. Angier, Boston; H. M. McIlrath, Chicago; J. L. Gibney and Brother, Philadelphia; H. H. Bogen, San Francisco; S. B. Roby, Excelsior Supply Co, Chicago.

MICHELIN TIRE AMERICAN AGENCY, INC. (New York) showed the widely known French tire in different sizes, expressed on the metric scale, and the Michelin non-skid tire, having a notably narrow leather tread, steel studded, and vulcanized to the rubber.

REPRESENTATIVES.—E. D. Winans, general manager; Branch managers: A. F. McWilliams, Boston; R. H McKinney, Philadelphia; J. B. McTeague, Chicago. J. L Kier, Philadelphia salesman; R. H. Magoon, Cleveland representative.

SAMSON LEATHER TIRE CO. (New York) made an exhibit of the Samson leather tire at the Madison Square Garden show, in addition to which this article was much in evidence at both shows, being mounted on tires of many makes.

REPRESENTATIVES.—Branch managers: A. E. Gallien, New York; J. Coggeshall, Boston; J. B McTeague, Chicago; G. P. Moore, San Francisco: L. G. Duquet, New York assistant. Salesmen: E. Sampson; E. Leroux; George Beach.

SOCIÉTÉ INDUSTRIELLE DES TÉLÉPHONES (Paris) have taken on the manufacture of pneumatic tires, which appeared for the first time in America at the Armory show, in an exhibit of Aster. & Co., a corporation under New York laws, with $250,000 capital, formed to market the products of certain French motors and accessories. The French company named have a capital of 18,000,000 francs, and in addition to their electrical output, control two rubber factories. Their rubber covered ignition wires for automobiles were also exhibited.

A VERY neat and practical German novelty is a hot-plate lifter made of strong wire, the handles being covered with soft rubber. The lifter acts exactly like a pair of shears, opening and shutting, the blades being curved to fit under the outer edge of the plate. The novelty is manufactured by Herrmann Schulder, Solingen, Germany.

THE NEW CONTINENTAL RUBBER CO.

THE incorporation of the Continental Rubber Co. under the laws of New Jersey, January 6, with $30,000,000 capital, caused quite a stir in the rubber trade, the objects of the company being very little understood except to those having inside information. For example, it was supposed in some quarters to be a manufacturing enterprise. Those interested in rubber planting wanted to know whether the great amount of Guayale that might be expected at once to come in would bring the price of other crude rubber down so low that there would be no good market for their product. Right here it is safe to say that no such danger was imminent. THE INDIA RUBBER WORLD interviewed several persons prominent in the Continental company but the information secured was not voluminous. It was learned, however, that the parties interested financially are United States Senator Nelson W. Aldrich of Rhode Island, Mr. B. M. Baruch, Mr. Thomas F. Ryan, Mr. Meyer Guggenheim, Mr. John D. Rockefeller, Jr. (son in law of Senator Aldrich) and certain Mexican financiers who are not named. It was definitely contradicted that John D. Rockefeller, Jr., was either a large stockholder or that he would be president of the company. The president's name was not given, but it was said that the man selected for that office was one whose name was not at all familiar to the rubber trade. Permanent offices for the company will be opened shortly at No. 111 Broadway, New York. From other sources it is known that the company's factory at Torreon, Mexico, is being considerably enlarged, and that an excellent quality of rubber is being secured from the Guayule shrub. It may be stated further that the new corporation is successor to the New Jersey corporation of the same name, formed in 1903 with $1,000,000 capital. The object of the reorganization remains to be known.

Some holders of United States Rubber stocks expressed anxiety over the organization of the Continental Rubber Co., which, they thought, might become in some way a competitor. This anxiety was not shared in well informed quarters, where it was pointed out that the new company would confine its operations to the crude rubber business, principally in Mexico, while the fact that Senator Aldrich, who is interested in Continental Rubber, is a fellow townsman and friend of President Colt of the United States Rubber Co., and that there are other ties of friendship between interests in the two companies, is a further assurance that the new organization does not intend to trench upon the business of the older one.

The details of promotion of the new company are in the hands of Bernard M. Baruch, who has been associated with the Guggenheims in smelting enterprises in Mexico.

GUAYULE PLANTS WANTED IN GERMANY.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I should feel obliged to you if you could recommend somebody to me in Mexico or New York who can ship large quantities of Guayule plants. Yours truly, FEIST STRAUSS.

Frankfort-on-Main, Germany, January 13, 1906

[IT may not be generally known that the new customs tariff schedule of Mexico, promulgated June 20 and taking effect September 1, 1905, includes among the articles subject to export duty, Chicle at the rate of 20 pesos [=$9.96] per metric ton, net, and Guayule (in the natural state or ground), 15 pesos [=$7.47] per ton, gross weight.]

GUAYULE NOTES.

THE Guayule Rubber Co, incorporated in California in November last, with offices in Fay building, Los Angeles, Cal., are producing rubber from the Guayule plant at San Luis Potosi. The president and general manager, who is in charge of the factory, is Mr. W. O Franklin, sometime representative of the Boston Woven Hose and Rubber Co., at Los Angeles.

=Thomas F. O'Donnell, Hotel Saltillo, Saltillo, Mexico, is desirous of obtaining "a machine that will clean the wood or fiber from the rubber bark"—referring evidently to the extraction of rubber from the Guayule plant.

=The Vienna journal *Das Handels-Museum* reports that the great steel firm of Krupp, in Essen, is interested in a German-Mexican rubber enterprise, interested in a factory at Torreon for working Guayule, under a patent which has been acquired by Krupp's representative.

THE BADLY USED HOT WATER BOTTLE.

A LITTLE book on the mis-use of hot water bottles, sent out by The B. F. Goodrich Co. (Akron, Ohio) is interesting as well as instructive. The cover has a picture of two little red devils poking barbed spears into a water bottle. This does not necessarily imply that the chief market for such wares is in the bad place, but rather expesses the Akron opinion of him who would abuse a good thing, and then blame the Goodrich folks. Thoughtless matrons are gently cautioned against the practice of heating the water by frying the bag on top of the stove, or boiling in the dish-pan. The bottles are also said to make good invalid cushions, only so long as they are not used as such. Water bottles are made to stand the weight of 5 or 6 pounds of water with a reasonable margin of strength; but if there were sufficient demand for puncture proof bottles to hold a few pounds of steam pressure, or a 200-pound woman, the Goodrich people stand ready to make them. Turpentine and coal-oil do not seriously injure rubber bottles, either, when carefully kept away from them; otherwise the rubber stands about the same chance as a snowball in——! If Father can afford it, too, the combination of a small boy and a new bag hanging on a nail produces an excellent jumping-jack for several minutes. If orders be properly placed at the factory, the Goodrich company might make water-bags specially designed for this or almost any other purpose. Their ordinary bags are made to hold hot water.

MR. ROBERT EDDY, city salesman for the Goodyear Rubber Co. (Milwaukee, Wisconsin), is the originator of a very catchy post card souvenir which is copyrighted and which many large houses have purchased as an advertising novelty. It is in reality a nice little hot water bottle, made of white rubber bound in red, and attached to a tag, the reverse side of which shows a picture of a pair of feet that certainly did not grow east of Chicago, and between them printed in large type the legend—"Don't Get Cold Feet." This without doubt appeals to the American poker player and he goes after it with both feet.

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED DECEMBER 5, 1905.

NO. 806,090. Hot water bag [with pocket for holding a nursing bottle]. L. Allenberg, San Francisco.

806,101. Endless solid rubber tire. R. D. Bradley, Canton, Ohio.

806,182. Horseshoe [with flexible pad]. M. S. Porter, Brigham, Utah, administratrix of M. E. Porter, deceased.

806,188. Medical powder application. D. W. Rees, Needles, Cal.

806,211. Hard rubber disk and ball for disk water meters. J. Thomson, New York city, assignor to Neptune Meter Co., Long Island City, N. Y.

806,235. Rubber holding attachment for pencils. A. F. W. Bowen, San Francisco.

806,306. Fountain syringe [Described in THE INDIA RUBBER WORLD, December 1, 1905, page 54.] C. A. Tatum, New York city.

806,341. Lawn sprinkler. H. Hamilton, Indianapolis, Ind.

806,351. Vehicle tire. A. DeLaski, assignor to The de Laski & Thropp Circular Loom Co., both of Trentou, N. J.

806,352. Pneumatic tire. J. P. LaGrand, Levalloil-Per et, France.

806,520. Metallic overshoe for vehicle wheels. H. L. Canne, Dingman township, Pike county, Pa.

806,546. Flexible ruler. P. C. Lawless, Hampstead Heath, Lons don, England.

806,584. Wheel [with cushion tire]. G. N. Sheppard, Fillmore, Minn.

806,623. Resilient tire. W. F. Beasley, Plymouth, N. C.

806,654. Wheel tire. L. S. Flatau, St. Louis.

806,657. Resilient tire. [Provided with a series of rubber block, between an outer and an inner rim]. I. Guiot, Puyricard, France.

806,665. Hose coupling. J. H. Henderson and A. Sykes, Houston, Pa.

Trade Mark.

13,489. Erasers. E Faber, New York city. *Essential feature.*—The representation of a circumferential band of yellow or gold color contrasting with a darker color on each side thereof and produced upon a metallic band or holder.

ISSUED DECEMBER 12, 1905.

806,810. Wheel tire attachment. [Pneumatic tire, with non-elastic tire casing.] J. F. Horn, Hazelton, Pa.

807,073. Bicycle tire. [Inner tube of metallic woven wire, incased in a rubber tube; the inner portion and outer portion are separate.] L. W. Groat, Hudson, N. Y.

807,083. Tiling [for flooring or walls]. F. C. Millhoff, Akron, Ohio.

807,087. Tire plug. F. B. Parks, Grand Rapids, Mich.

807,169. Rectum supporter [consisting of a spherical body of rubber and cords integral with the body]. E. H. Higbee, Roodhouse, Ill.

807,184. Hose support. [For garden hose.] J. E. Malnburg, San Francisco, Cal.

807,311. Tire for vehicles. [Comprising a plurality of rubber tire units, clamped to the wheel by a circular band.] R. B. Parker, Hartford, Conn.

807,351. Pneumatic tire [adapted to clincher rim]. J. H. Bleoo, assignor to A. B. Levy, both of New York city.

807,365. Water bag. [Described in THE INDIA-RUBBER WORLD, May 1, 1904—page 280.] A. C. Eggers, assignor to Goodyear's India Rubber Glove Mfg. Co., both of New York city.

807,366. Surgical operating cushion. *Same.*

Trade Marks.

10,389. Particular kind of restored or devulcanized rubber manufactured from waste rubber goods. Philadelphia Rubber Works, Philadelphia. *Essential feature.*—The word EURRKA

14,324. Flexible tubing. Chicago Tubing and Braiding Co., Chicago. *Essential feature.*—The word REX.

14,456. Packings. Keasbey & Mattison Co., Ambler, Pa. *Essential feature.*—The word AUTOBESTOS.

ISSUED DECEMBER 19, 1905.

807,499. Hose coupling. P. Roulstone, Bayonne, N. J.

807,500. Fountain pen. W. W. Sanford, Newark, assignor of one half to F. D. Bennett, Freehold, N. J.

807,537. Pneumatic tire [having a plurality of inflatable sections, with a connecting tube]. E. M. Birdsall, assignor of one half each to M. B. Birdsall and F. J. Barron, all of Buffalo, N. Y.

807,595. Hose coupling. W. H. Brewer, Rolling Prairie, Ind.

807,597. Respirator. G. T. Carpenter, Chicago.

807,633. Tire [comprising a series of elastic blocks, held in place by a suitable rim]. J. F. McCanna, Chicago.

807,748. Elastic vehicle tire [An endless cushioned body, held in place by transverse bolts through the tire and rim flanges] G. Knadler, Akron, Ohio.

807,825. Composite heel for boots and shoes. F. W. Hunt, Boston.

807,844. Eye protector. E. Mirovitch, Paris, France.

807,905. Syringe [for dental use]. J. C. Blair, assignor of one half to the Blair Dental Mfg. Co., both of Louisville, Ky.

807,908. Exercising device. H. J. Bradstreet, assignor to Auto Physical Trainer Co., both of Buffalo, N. Y.

808,008. Hose coupling. J. Z. Cagle, Upward, N. C.

ISSUED DECEMBER 26, 1905.

808,074. Tire cover [with non-skidding tread]. J. C. Dufour, Charenton, France.

808,219. Hose coupling. H. A. Schroeder, Baltimore, Md.

808,272. Reservoir attachment for pens. H. R. Chubb, Greenwich, England.

808,288. Storm shield for buggies and other vehicles. S. B. Laune and C. M. Shelden, Woodward, Okla.

808,426. Cushioned tire. C. W. Adsit, Owatonna, Minn.

808,433. Abdominal supporter or bandage. W. R. Cartledge, assignor to W. F. Ware, both of Philadelphia.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of those listed below was in 1904.

* *Denotes Patents for American Inventions.*

[ABSTRACTED IN THE OFFICIAL JOURNAL, DECEMBER 6, 1905]

17,579 (1904). India-rubber substitute. [Amber is dissolved in castor oil and heated with sulphur. Ozonized air is passed through the cooled mass until it becomes viscous, after which calcium carbonate, benzol, and sulphur chloride are added.] H. Tiehsen, Berlin.

17,629 (1904). Hoof pad. B. P. Gray, Birmingham.

* 17,721 (1904). Fountain pen. F. C. Brown, New Brighton, New York.

17,722 (1904). Artificial hand [comprising a rubber glove]. A. Grogran, London.

17,759 (1904). Elastic tire [consisting of a metal band having wedge shaped projections; two corrugated leather bands having rubber pads, a band of leather, another pair of corrugated bands with rubber pads, and a leather cover]. A. J. Boult, London.

17,909 (1904). Protecting leather band for pneumatic tires. C Watkins, Woodford Bridge, Essex.

17,914 (1904). Eraser [protected by a clip of leather covered steel]. W. Appleyard, Sheffield.

[ABSTRACTED IN THE OFFICIAL JOURNAL, DECEMBER 13, 1905.]

18,129 (1904). Cover for pneumatic tire. [To fit the cover over the air tubes without creases, the notches in the cover are furnished with laces, the cover being attached by straps]. A. Hanamann, Vienna, Austria.

*18,160 (1904). Elastic tire. C. C. Worthington, New York city.

18,251 (1904). Inflatable wearing apparel. [Garments to be used as life buoys.] Mr. Lloyd, Roscommon, Ireland.

18,424 (1904). Pneumatic tire for heavy vehicles. C. H. Gray, Silvertown India-rubber Works, and T. Sloper, Devizes, Wiltshire.

18,506 (1904). Heel protector. E. Wootten, St. Marks, Bristol.

[ABSTRACTED IN THE OFFICIAL JOURNAL, DECEMBER 20, 1905.]

18,545 (1904). Device for detecting punctures in tires. T. Mitchell, Manchester.

18,588 (1904). Cap for jars and feeding bottles. [To prevent the rolled edge of a teat or cap from becoming permanently stretched, owing to imperfect vulcanization, a spring is inserted.] M. D. Armstrong, Forest Gate, Essex.

18,651 (1904). Apparatus for separating India-rubber from waste. H. Penther, Hanover, Prussia.

*18,758 (1904). Dental syringe. C. G. Myers, Cleveland, Ohio.

18 894. Heel protector. A. V. Campbell, Hornsey.

[ABSTRACTED IN THE OFFICIAL JOURNAL DECEMBER 29 1905.]

19,012 (1904). Non-elastic tire. [A series of wooden tread blocks provided with a rubber seating are secured by bolts to the felloe.] W. G. Titherington, Liverpool, and F. J. McBrearty, Bottle, Lancashire.

19,033 (1904). Heel protector. A. Rooney, Bolton, Lancashire.

19,093 (1904). Elastic tire [laterally corrugated to form treads, having hoops of ebonite vulcanized to the base]. C. Challiner, Manchester.

*19,117 (1904). Cushion tire and cover for the same. H. E. Irwin, Galesburg, Illinois.

19,197 (1904). Elastic tire [with holes in rows in the tread portion, the holes extending partially through to the base of the tire]. *Same.*

19,344 (1904). Boot. [To increase elasticity an India-rubber pad is inserted between the inner and outer sole.] E. J. Burnett, Woolwich.

19,362 (1904). Boot. [To facilitate ease of repairs an edging is attached to the insole so as to form a recess in which are placed removable blocks of rubber held in position by a plate.] A. G. Grice, Carnoustie, Forfarshire.

*19,369 (1904). Elastic tire [held in position by bolts which are free to move on washers of leather]. C. H. Bryan, Chicago, Illinois.

19,384 (1904). Detachable band for tires, to prevent slipping and puncture. G. J. Arnold, Torquay, Devonshire.

19,393 (1904). Pneumatic tire. [A channel rim carrying an inflated tire is secured on the metal rim by bolts]. E. C. Defilippi, London.

19,404 (1904). Tire cover. [Metal shoes hinged together to form a band to prevent slipping and puncture.] H. P. Jump, London.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATES OF APPLICATION.)

355,286 (June 16, 1905). Société anonyme des Usines de Graviguy. Metal rim for pneumatic tires.

355,339 (June 19). G. Muller. Process for mending torn pneumatic tires.

350,149 (Sept. 1, 1904). Société Jules Jean et Cie., et M. Ranerat. Process for condensing the vapors of volatile solvents.

355,398 (June 20, 1905). W. Vale. Pneumatic tire.

355,470 (June 22). A. Falque. Tire.

355,472 (June 23). J. Van Langenhaven. Device for protecting pneumatic tires.

355,630 (June 26). E. Lejeune. Compositiou for automatically stopping tire punctures.

355,634 (June 26). C. R. Bullard. Wear-proof pneumatic tire.

355,621 (June 29). Detachable shoe pads for horses.

355,496 (June 23). G. A. Lefebore. Apparatus for extracting latex from rubber plants.

355,611 (June 5). K. Von Stechow. Method of extracting latex from rubber plants.

355,642 (June 26). G. L. Pelicier. Method of attaching rubber tires to wheels of heavy vehicles.

355,649 (June 27). G. L. Krol. Means of preventing side cracking of motor tires.

355,724 (June 17). Fourniand. Pneumatic tire designed not to blow out or sidecrack.

355,740 (June 27). Bowley and Haumer. Process for the manufacture of rubber goods.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieue-Counseil, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

WHAT DR. KITTLER KNOWS (?) ABOUT RUBBER.

[FROM "GUMMI ZEITUNG" (DRESDEN) OCTOBER 6.]

MARVELOUS must be the rubber shoes made after the method described by Herr Dr. Kittler. This gentleman contributed to several daily papers an article under the heading "Der Gummi," which in so far as it relates to the rubber technique is criminally incorrect. Some jester must have taken advantage of the Doctor's credulity, for he could never have seen or read such perversity. Just listen:

"The extraordinarily simple manner of manipulating rubber makes it easy for us to comprehend the manufacture of any article in ordinary use made of rubber. We will take for instance the well known rubber shoe. It is made by various methods, but generally this way: The sole and upper are specially shaped and then pasted together on a pattern. The material, before shaping, is of course dyed black, which is accomplished by kneading it thoroughly, while still in the crude state, with lampblack; a gentle heat being applied to render the rubber more pliable. For this every factory has its special formula, but the main principle, the coloring of the crude material and the shaping, by kneading, before the rubber is vulcanized, as well as the pasting together of the component parts, is always the same. After color and shape have been imparted to the rubber shoe in this manner it is made hard by hard vulcanization. This is effected by adding from 30 to 35 per cent. of sulphur, after which it is subjected to heat, at 135 degrees, for from 5 to 6 hours. This accomplished, the rubber shoe is complete, and it merely remains to give it a fine black gloss. Special polishing machines are employed for this purpose, by which the exterior is polished with powdered pumice stone. Many rubber shoes have a cloth lining which is made to adhere to the sheet rubber by pressing it on between two rollers."

And further: "Although the rubber industry has attained a high degree of perfection several defects are still quite apparent. First, this one, that as yet it has been impossible to check the gradual hardening of rubber goods, tending to render them unserviceable; and secondly, that no particular usefulness has been found for old rubber goods, especially, that no cheap process is known by which the sulphur contained therein can be reclaimed. The solving of these problems would be an enormous advance in the economy of the whole rubber industry."

Tears of laughter have been shed by us on reading this, and our readers no doubt will be similarly impressed on reading such wisdom. The problem "to reclaim the sulphur from old rubber in a cheap manner," is certainly the acme of the reclaiming science. Saint Bimbam!

RUBBER IN SOUTH INDIA.

THE Periyar Rubber Co., Limited, has been formed to acquire the Thattakaad estate on the Periyar river, in Travancore, with an authorized capital of 1,000,000 rupees [=$324,444]. The initial issue is 400,000 rupees in shares, of which the vendors take one half (in addition to 70,000 rupees in cash) and the other half, issued to the public, was applied for in advance. There are 800 acres of land, of which 230 acres were planted with Pará rubber in 1902; 200 acres in 1904; and 70 acres this year, and the remainder is reported to be adapted for rubber planting. The shares offered to the public will provide the cash part purchase price and the upkeep of the estate until 1908, when the yield of rubber is expected to make the estate self sustaining. In addition to the rubber above mentioned, the equivalent of 50 acres of *Ficus elastica* has been planted along the edge of the river.

AMERICAN CONSUMPTION OF INDIA-RUBBER IN 1905.

THE year just closed witnessed the largest importation of crude rubber into the United States ever known. This, by the way, is getting to be a regular story, only one year in the last decade having failed to show an increase in arrivals. The increase in arrivals for 1905 was a round 1000 tons, but as the stocks were slightly higher at the end than at the beginning of the year, the deliveries to manufacturers showed a somewhat smaller increase. The world's production gained, but from the way that prices were maintained throughout the year it is evident both that actual consumption has been active, and that the trade sees no prospect of an early change in the conditions which have prevailed for the past two years or more.

Comparative statement of prices of fine Pará rubber in New York and Liverpool, for several years past:

YEARS.	New York.	Liverpool.
1899	91 @ 1.10	3.10 @ 4. 7¼
1900	83 @ 1.11½	3. 8½ @ 4. 9
1901	76 @ .95	3.4 @ 3.11½
1902	66 @ .92	2.10 @ 3. 9½
1903	78 @ 1.13	3. 6¼ @ 4. 8
1904	89 @ 1.32	3.10¾ @ 5. 6
1905	1.13 @ 1.35	4.10¼ @ 5. 8¾

The next table analyzes the imports of crude rubber into the United States by grades, the figures denoting tons:

YEARS.	Fine Pará.	Coarse Pará.	*Centrals.	African and E. I.	Total.
1899	8,622	3,876	3,440	7,157	23,005
1900	8,079	3,906	3,020	5,463	20,468
1901	9,304	3,838	2,927	7,139	23,208
1902	8,666	4,235	2,588	6,353	21,842
1903	9,325	4,609	3,040	7,786	24,760
1904	9,526	4,841	4,052	9,204	27,623
1905	8,973	4,908	4,475	10,279	28,635

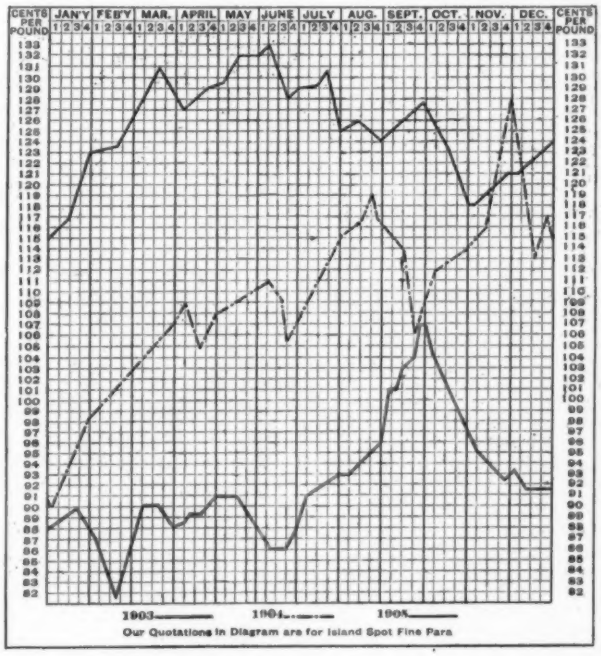
[* Including Caucho and Pernambuco.]

The figures in the next column, showing the extent of the world's visible supplies of rubber on January 1, 1906, have been derived from the Messrs. Morse's tables, though they are given on this page in pounds instead of tons:

Stocks in the United States	*pounds*	1,201,980
Pará grades	235,200	
Central American and Caucho	167,100	
African and East Indian	799,680	
Stocks in Europe		7,929,600
Pará grades	2,036,160	
All other	5,893,440	
Stocks Pará grades at Pará and afloat		4,345,600
Total		13,477,180
Total, January 1, 1904		11,323,200
Total, January 1, 1903		12,221,440
Total, January 1, 1902		15,028,160
Total, January 1, 1901		16,616,320
Total, January 1, 1900		10,251,480

RANGE OF RUBBER PRICES FOR THREE YEARS.

DIAGRAM (copyrighted 1905 by Henry A. Gould) indicating spot prices at New York of Islands fine Para rubber.



The topmost line relates to prices in 1905, the middle line 1904, and lowest line in 1903.

DR. PAUL PREUSS, the distinguished German botanist, director of the colonial botanical garden at Victoria (Kamerun), and the discoverer of the *Kickxia* species as a source of rubber, has recently been looking after the agricultural affairs of New Guinea. On his way home he visited the Federated Malay States, and in company with Mr. J. B. Carruthers, director of agriculture there, inspected the experimental gardens and some typical rubber plantations. The *Malay Mail* says that while Dr. Preuss was impressed with the splendid growth and health of the Pará rubber (*Hevea*) trees, he was not inclined to waver in his confidence in *Kickxia* rubber as suited for cultivation.

CONSUMPTION OF INDIA-RUBBER BY THE UNITED STATES AND CANADA (IN TONS).

[From the Annual Statistical Summary of ALBERT T. MORSE & Co., brokers, New York]

DETAILS.	1891.	1892.	1893	1894.	1895.	1896.	1897.	1898.	1899.	1900	1901.	1902	1903.	1904.	1905.
Imports to United States	16,152	15,347	16,420	14,643	16,182	14,333	17,671	18,620	23,095	20,468	23,208	21,842	24,760	27,623	28,635
Exports to Europe	982	491	714	391	324	500	250	150	300	450	680	430	490	274	357
Net Imports	15,170	14,856	15,706	14,252	15,858	13,833	17,421	18,470	22,795	20,018	22,528	21,412	24,270	27,349	28,278
Add Stock January 1	1,260	1,086	1,217	1,037	1,420	558	641	744	591	712	1,198	1,399	331	256	305
Aggregating	16,430	15,942	16,923	15,289	17,278	14,391	18,062	19,214	23,386	20,730	23,726	22,811	24,601	27,605	28,583
Less Stock end of year	1,086	1,217	1,037	1,420	558	641	744	591	712	1,198	1,399	331	256	305	537
Deliveries to Manufacturers	15,344	14,725	15,886	13,869	16,720	13,750	17,318	18,623	22,674	19,532	22,327	22,480	24,345	27,300	28,046

A RUBBER ROLLING MACHINE.

THERE is illustrated on this page the latest (1905) pattern of the rubber rolling and washing machine manufactured by The Federated Engineering Co., Limited, of Kuala Lumpur, Federated Malay States. It was in 1903 that this firm first exhibited an experimental machine for the treatment of freshly coagulated rubber latex, at the yearly Agri-Horticultural show at Kuala Lumpur, where orders for several were placed by the rubber planters in attendance, as a result of its successful making of "crêpe" rubber. The machine was favorably reported on by Mr. P. J. Burgess—now, by the way, rubber expert for the Malay States—since which time various improvements have been developed by the makers of the machine.

The original specimen was a washing machine, but there is now offered also a rolling machine of practically similar design. The process of making the "crêpe" may be entirely carried out on the washing machine, although it is stated that a much finer sample is obtained by passing the washed rubber through the rolling machine, and this practice is being adopted.

RUBBER ROLLING MACHINE.

The machine takes in freshly coagulated latex, and turns out thin, chewed-looking sheets called crêpe rubber, thoroughly washed and clean. The actual coagulation is not mechanical, but the latex is poured into a tank, curdled with acid, sliced and fed directly into the machine.

The manufacturers of the machines state:

The action of the rollers on the freshly coagulated latex is to entirely remove all albumen, and other impurities which remain in the rubber (to its consequent detriment) if made into biscuits.

The crêpe after being treated on the two machines has a close, fine, even texture and is extremely thin, and can thus be dried, without the aid of an artificial drying house, in about three days, and is considerably easier to pack for shipment than any in the biscuit form.

The machines working together will treat at the very least 100 pounds of dried rubber per hour or singly 50 pounds per hour, and each machine requires from 5 to 8 brake horse power to drive it; only one man is required to feed a machine, and the saving effected over the hand made biscuit process is obvious.

By the manufacture of crêpe rubber the disadvantages of having a large number of coagulating dishes and trays are obviated, as the latex is poured into one large receptacle and there coagulated in bulk by the addition of acetic acid, tannic acid, or other coagulating agent, after which it is cut into slabs and fed into the washing machine.

In England some protest has been heard against the importation of washed rubber, since the manufacturers have been accustomed to washing in the factory. If the Federated Company's machine could turn out a product clean enough for immediate mastication and mixing, there would be undoubted economies in freight, in the removal of sources of decay, and in the carrying on the whole process of coagulation, washing and sheeting at one operation by steam power, while the latex curds are fresh and soft, and more readily cleansed. There is a possible economy to the trade, also, in being able to calculate prices more accurately on the basis of a pure, dry article. The manufacturers naturally do not want rubber handled any more than is necessary, recognizing the loss of elasticity, and the increase in adhesiveness which results from too much mastication and kneading; but if it can be shown that the proper time to wash rubber is when it is freshly coagulated, and the curds are light and spongy, the plantation washing is to be recommended, as enabling the maximum amount of nerve to be retained in the vulcanized products.

The manufacturers announce that they have also in hand a mechanical coagulating device, still in an experimental stage, though they expect soon to have it on the market. It appears that the highest price yet attained in London for any plantation rubber was for crêpe prepared on these machines. For further information regarding crêpe rubber and its preparation, the reader is referred to an article in THE INDIA RUBBER WORLD, January 1, 1906—pages 107–112.

FAR EASTERN RUBBER COMPANIES.

A BOOK entitled "Rubber Producing Companies Having Properties in the Malay Peninsula and Ceylon," and issued by Gow, Wilson & Stanton, Limited (London), is likely to give those who have not kept themselves well informed something of a surprise in regard to the extent to which the English public have become interested in rubber planting. It is a directory of companies, containing such details as an investor naturally would want. From the book we compile some figures showing that 20 companies having estates in Ceylon have outstanding £1,806,383 [=$9,031,915] in shares, and the capital of 11 of the companies, amounting to £1,737,483, is reported fully paid. Most of these, however, are long established tea companies, but they are also largely interested in rubber, some having their tea planted throughout with rubber, in addition to large areas in rubber alone. Fifteen companies having estates on the Malay peninsula, having a total authorized capital of £658,000 [=$3,290,000], have shares outstanding to the extent of £564,520, of which £258,743 are held by vendors of numerous rubber plantations acquired by the various companies, and £305,777 have been subscribed.

OBITUARY.

JOHN L. CHAPMAN.

THE rubber trade in Trenton, New Jersey, and indeed the jobbing trade in many parts of the United States, are sincerely mourning the death of Mr. John L. Chapman, who for many years was a well known figure in mechanical rubber circles, his introduction to the rubber trade dating back some twenty-five years, when he entered the employ of The Star Rubber Co., (Trenton), at the time when the late Thomas A. Bell was the controlling factor in that business. Later he was employed by the Empire Rubber Co., and later still carried a line of goods for the Home Rubber Co. He was a member of the selling force of the Hero Fruit Jar Co. (Philadelphia) for many years, and continued his connection with that company up to the time of his death. He, however, through his wide acquaintance was able to hold much of his trade in mechanical rubber goods, and never lost his interest in that line of work.

Mr. Chapman was born in Philadelphia 53 years ago, and had been a resident of Trenton for some 30 years. About a year ago he was forced to retire temporarily from business, being attacked by Bright's disease. He apparently recovered, however, and went again on the road, but falling ill in Chicago, was obliged to relinquish work and soon after passed away. During his years of travel Mr. Chapman made many warm friends, and particularly in his home city, Trenton, was he greatly esteemed.

The funeral, which took place in Trenton on January 11, was attended by prominent manufacturers, resident in Trenton, Philadelphia, New York, and the West. The services were conducted by the Rev. A. J. Weisley, the Rev. Dr. Samuel Sheldiford, of Trenton, and the Rev. Dr. James Boyle, of Philadelphia. The interment was at Riverview Cemetery, Trenton.

H. G TIPPET.

The death of Henry Grendon Tippet will cause widespread regret in the rubber trade, because he was well-known in the United States as well as in Great Britain. Mr. Tippet's retirement from business with the idea of enjoying a well earned leisure was reported in THE INDIA RUBBER WORLD of December 1. On December 23 his death occurred at his country seat, the "Cleeve," Ross, Herefordshire, England.

Mr. Tippet was born in Stanley, New Brunswick, Canada, December 15, 1843, his father being a clergyman of the Church of England. At an early age he went to England, his father's home, and as a young man entered the employ of a large business house in Manchester. He was soon transferred by the firm to one of their India houses, and remained in India for about 15 years. Returning to England he married and, entering the rubber field, soon became chairman (or, as the Americans say, president) of The Liverpool Rubber Co., Limited. Under his careful and wise management the company became one of the best known rubber firms in the British empire, and their product was well known through its many good qualities. He worked likewise for the benefit of the trade as a whole, as shown by his active connection with the India-Rubber Manufacturers' Association.

Mr. Tippet had visited the United States several times. He was a man of deep and sincere religious convictions, a leader in many good works, a thorough business man, and the father of a charming family. He leaves a wife, a daughter, and five sons, the oldest son being at present located in the United States, while the second son is a lieutenant in the English royal navy.

W. H. ACKEN.

WILLIAM H. ACKEN, president of the New York Rubber Co. died on Sunday evening, January 28, at his residence, No. 29 West Eighty-second street, New York, of a complication of diseases, after an illness of about two weeks. Mr. Acken was in his seventy-fourth year, having been born January 11, 1833, at New Brunswick, New Jersey. He was graduated from Rutgers College in 1851, at the age of 18. In 1858 he became connected with the New York Rubber Co., then in its seventh year, and remained with it continuously until the end of his life. In 1868 he became treasurer, and in 1871 was elected also a trustee of the company, and in 1883 he succeeded to the

presidency. About 20 years ago Mr. Acken, who formerly lived in New Brunswick, moved to New York city.

Mr. Acken was regular in attendance at the offices of the company in Reade street, which have remained in one position for an unusual long period, considering how frequently business offices change their location. The office staff was seldom changed except by the death of a member. Twelve years ago THE INDIA RUBBER WORLD, reporting a dinner tendered by the officers and staff, mentioned that the combined service in the company of the thirteen persons present was 324 years—an average practically of 25 years—and several of those named are still connected with the company. In addition to this business connection, Mr. Acken was a director in the Norfolk and New Brunswick Hosiery Co., in the foundation of which, a half century ago, a number of leading rubber men were interested.

Mr. Acken married Mary S. Letson, daughter of the late Johnson Letson, of New Brunswick, who for many years was prominent in the rubber trade. The death of Mrs. Acken occurred May 3, 1902. One son survives, Mr. John Acken, treasurer of the New York Rubber Co., and a daughter. Funeral services were held at the home on the morning of January 31, and the interment was in the family lot at Kensico, New York, where, about a year ago, Mr. Acken built a fine mausoleum.

Born of Revolutionary stock, part Quaker and Scotch, Mr. Acken combined rare and lovable qualities. A lover of peace, he would fight for his friends and for the right, with untiring loyalty. Quick in his decision, generous, the soul of old fashioned courtesy, his like is too rarely seen. The business that he controlled and administered so successfully was run on absolutely straight business lines, but with a regard for the feelings of all the employés that it was like a family where there was no unrest and no bickerings. In the trade his word was his bond, and he expected others to deal with him as he did with them. And they usually did. His influence for fair dealing was most marked and the trade suffers much in his death.

THE CONGO RUBBER SITUATION.

IN their annual review of the Antwerp rubber market for 1905—the statistical details of which appear on the market pages of this Journal—Messrs. Grisar & Co., brokers, say:

Imports of Caoutchouc in this market have remained essentially the same as last year. Total exports from the Congo basin have been slightly less than during the preceding year. A noteworthy increase in the output of Caoutchouc gathered is hardly expected at this time, and the present output must be cousidered to represent the mean figure of the annual production of the Congo Free State.

The severe measures proclaimed by the State, for the purpose of stopping the abuses which over exploitation would not fail to produce, and to prevent the impoverishment of the forests belonging to the domain, have, in fact, tended to diminish exports to a normal but regular figure.

Producers have especially directed their efforts towards improving the quality of the gathered product, and in this respect new and real progress has been made on the Congo. Experiments in treating pitchy Caoutchouc with talcum do not appear to have produced the expected results. This harmless substance, which, however, has no effect on Caoutchouc, has merely given a less unfavorable appearance to the pitchy lots, without contributing to their improvement in any respect. We therefore advise the discontinuation of this practice, which, while doing no harm, means simply a loss of time and money.

The finest grades of Caoutchouc are still coming from the Kasai, Equateur, Lomami, Uelé, and Mongala districts.

Planting is going on gradually and regularly, in conformity with the order of September 22, 1904, of which we had occasion to speak on our last annual review. Estimating from the aggregate of the crops gathered in 1904, there have been planted out during the past year about 2,450,000 Caoutchouc trees and lianes, one half of which were planted by the employés of the State and the remaining one half by companies and private persons established on the Congo. This brings up the amount of planting done in accordance with the aforesaid legal provisions, to approximately 12,500,000 Caoutchouc producing plants.

Even the oldest of these cultivations can hardly be made productive until several years shall have elapsed. Experiments have already been attempted with plants of various ages, for the purpose of determining the time at which the different species cultivated may be worked under paying conditions, but results have not been sufficiently conclusive to make it possible to draw conclusions from them for the future.

The import of new kinds of Caoutchouc continues to show a large development in our market, as proved by our statistics. Sales have at all times been easy and regular, at paying rates

Concerning the new kinds in which the greatest interest was shown, we shall mention in the front rank those species of Caoutchouc originating from the methodically managed plantations in Ceylon and in the Federated Malay States, where the cultivation is growing to considerable dimensions, as well as from Bahia, in Brazil. These gums, thanks to their absolute purity and excellent quality, have met with an extremely favorable reception from purchasers, and have brought prices largely exceeding those paid for Pará. These cultivations, which have been for several years past a subject of extended investigations and essays, appear to have solved the question which has given rise to such numerous controversies, viz.: that of the rational planting of Caoutchouc producing plants.

As, moreover, the results of this industry, from the economic standpoint, appear to be brilliant, a considerable future development may well be foretold for them. As the present production still remains insufficient to meet the industrial demand, this new source of supply will be highly appreciated.

The world's production of Caoutchouc may at the present time be estimated at about 75 000 tons. During the year considered in this review, prices have continued to advance, and new supplies have been quickly taken up as they gradually came on the market

From the commencement of the year, quotations already began to show an advance of about 8 per cent With the exception of a slight lull during the summer, which usually occurs on account of the heated term, prices have advanced until the end of the year, closing with a mean advance of about thirteen per cent. when compared with those at the end of December, 1904.

THE Canadian commercial agent at Melbourne reports: "The orders recently obtained in Victoria, South Australia, and Tasmania for Canadian rubbers and sand shoes have been of a very satisfactory nature in volume. This business is likely to increase to large proportions, which result is attributable to the excellent quality of the goods and the improved representation the line is receiving." With regard to mechanical rubber goods, the report says: "There is always a demand for standard qualities of British make, which were first introduced, and for many years practically held the trade." Of late, however, German competition has been felt.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of India-rubber and Gutta-percha, for the month of November, 1905, and for the first eleven months of five calendar years:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
November, 1905 ..	$ 108,144	$ 126,326	$ 248 321	$ 482,791
January-October ..	958,660	1,059,094	2,371,205	4.388,959
Total.....	$1,066,804	$1,185,420	$2,619,526	$4,871,750
Total, 1904....	808,771	1,099,030	2,149,273	4,057,074
Total, 1903....	777,361	890,835	2,276,179	3,944.375
Total, 1902....	671,906	958,085	1,825,127	3,455,118
Total, 1901....	547,476	842,333	1,603,047	2.992.856

FOREIGN RUBBER GOODS TRADE OF CANADA.

CANADIAN imports of India-rubber and Gutta-percha manufacturers, for the fiscal year ended June 30, 1905, are officially stated to have been in value as follows:

IMPORTS.	United States.	Great Britain.	Other Countries.	Total Value.	Duties Collected.
Boots and shoes ...	$132,217	$ 207	$ 285	$132,709	$31,232.58
Belting.....	60,885	722	...	61,607	15,341.60
Clothing and waterproof cloth... ..	25,053	111,955	186	137,194	37,689 95
Hose.....	58,277	1,331	....	59,608	18,038.69
Packing and mats..	58,119	1,328	....	59,447	20,088.03
All other.....	299,787	49,438	25,600	374,825	91,215.67
Total.....	$634,422	$164,996	$26,071	$825,390	$213,606.52
Total, 1903-04	617,471	334,646	26,098	978,215	256,210.51
Total, 1902-03.....	573,421	446,811	25,579	1,045,811	253,873.15
Total, 1901-02.....	525,218	217,812	31,999	775,029	201,698.64
Total, 1900-01.....	434,590	154,944	21,738	611,272	163,012 44

The share of Germany is this trade has declined from $18,877 to $18,825, while Austria has increased from $950 to $3,403. The share of France declined from $4638 to $3226, and Russia's from $1179 to $205.

There may also be noted the following imports, not classified by the customs as "rubber goods," but having a relation to the industry:

IMPORTS.	United States.	Great Britain.	Other Countries.	Total Values.	Duties Collected.
Webbing, elastic and non elastic.	$110,828	$70,233	$2784	$183,835	$32,476.81
Stockinettes for rubber footwear	52,185	14,619	....	66,804	9,363.85
Duck for rubber belting and hose	88,433	634	....	89,067	free
Rubber thread....	5,008	....	....	5,008	free

EXPORTS OF CANADIAN RUBBER GOODS.

To—	Value.	To—	Value.	To—	Value.
Great Britain	$46,500	British Guiana	$1,571	Argentina..	$ 137
Australia....	49,575	Brazil.....	4,734		
Newfoundl'd	17,685	Chili	1,242	Total.....	$170,359
New Zealand	30,789	China.....	750	Total, 1904	128,067
Italy.....	9.659	British Africa.	285	Total, 1903	142,891
United States	6,688	B. W. Indies..	227	Total, 1902	322,572
Japan.....	225	Denmark.....	60	Total, 1901	151,656
Turkey	16	Cuba	216		

IMPORTS OF RAW MATERIALS.

CLASSIFICATION.	Pounds.	Value.
Gutta-percha.....	112	$ 98
India-rubber.....	2,810 238	2,458,386
Rubber recovered; rubber substitute; hard rubber in sheets	2,158,846	230,439
Rubber powdered and rubber waste.....	505,715	34,360
Total, 1904-05.....	5,474,911	$2,723,273
Total, 1903-04.....	5,753,288	2,512,168
Total, 1902-03.....	5,404,124	1,820,054

THE TEXTILE GOODS MARKET.

THE cotton duck situation at this writing shows extreme strength and a decidedly buoyant tendency, the estimated relation of supply and demand, indicating well sustained, if not advancing prices. Since our last report it has been practically conceded that the crop will not exceed 10,750,000 bales, the government report showing that there will be an increase of 750,000 bales over previous estimates.

The mechanical rubber goods trade have contracted for the major part of their season's supply of hose and belting ducks at a price which is quite an advance over that paid last season. The present price of regular hose and belting ducks is 22½ cents, which figure will probably prevail through the season, unless there should be an advance in cotton, in which event the price of ducks will naturally be increased.

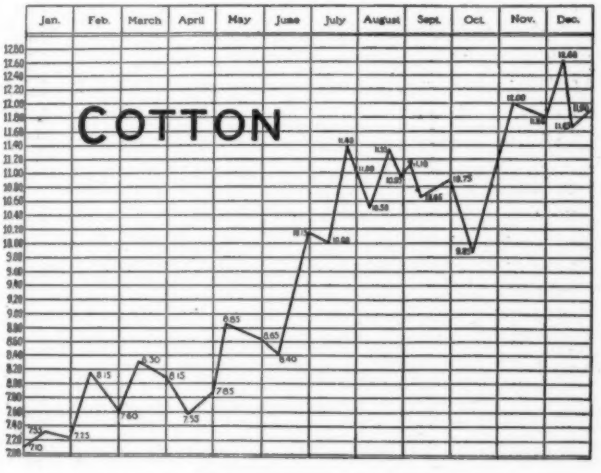
The mills are virtually sold to the limit for the year and are finding it extremely difficult to meet the present demand. It is claimed that most of the prominent rubber trade buyers who have contracted for what would ordinarily have been a year's supply, will, at the present rate of consumption, use their stocks in two-thirds of that time.

The rubber shoe trade is buying actively and the demand shows no indication of abatement. The speculative market shows a strong and increasing bull tendency, the most conspicuous bear of the season having joined the bull forces.

Spot cotton (at this writing) is quotable at 12.25 as against 7.25 for corresponding date last year. There is such a paucity of spot goods that buyers are not standing on price, but readily pay full asking values and are willing to anticipate on the same basis, provided they can effect the acceptance of orders.

At a recent meeting of the Planters' Association held in New Orleans, it was voted to hold the balance of their cotton at 15 cents. A competent authority estimates that there can be no break in cotton before June at the earliest and then only in deference to large acreage and very favorable weather conditions.

The chart below, illustrating the range of cotton prices during 1905, is reproduced from the New York *Times*, through the courtesy of its editor:



RANGE OF COTTON PRICES, 1905.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

THE Akron rubber manufacturers have joined The Fisk Rubber Co. (Chicopee Falls, Massachusetts) in an effort to secure a reduction of freight rates on rubber, and especially on rubber tires. Besides claiming that the railroad companies are charging an excessive rate through a wrong classification, not only of tires, but of many other rubber goods, the manufacturers desire to get changed the rule which prevented single tube tires from being shipped while inflated.

At the annual meeting of the Swinehart Clincher Tire and Rubber Co., on January 8, James A. Swinehart was reëlected president. The other officers are practically the same as before, B. C. Swinehart being elected secretary, H. F. Siegrist treasurer, and William J. Frank vice president. These officers, with William Byrider, Frank E. Ream, and M. S. Rudgers constitute the directors. The usual dividend was declared.

The annual election of The B. F. Goodrich Co. was held January 10, with the same board of directors and officers elected as before, with the exception that Charles B. Raymond succeeded R. P. Marvin as secretary, Mr. Marvin having resigned some time ago on account of ill health. The officers elected are: Colonel George T. Perkins, president; B. G. Work, vice president; George W. Crouse, second vice president; C. B. Raymond, secretary; W. A. Folger, treasurer; F. H. Mason, general works manager; W. A. Means, assistant treasurer; E. C. Shaw, general superintendent; C. C. Goodrich, assistant general superintendent; H. E. Raymond, general sales manager.

President Swinehart, of the Swinehart Clincher Tire and Rubber Co., stated to THE INDIA RUBBER WORLD correspondent that the action commenced by his company in the United States court in Cleveland on January 10 was only the first of a series that will be commenced against the Motz Clincher Tire and Rubber Co. The plaintiff claims in this first suit that the Motz company has infringed upon the concave tire and the beaded thread patented by the Swinehart company, and damages are asked. Mr. Swinehart stated that other patents owned by his company protecting their tires have been infringed upon, and that two or three other suits will follow.

George A. Ludington has resigned as superintendent of the plant of the Firestone Tire and Rubber Co. to accept a similar position with the G & J Tire Co., (Indianapolis, Indiana). Mr. Ludington was with the Firestone company as superintendent for three years, previous to which time he was superintendent of the Morgan & Wright plant at Chicago for ten years. Mr. Ludington is the inventor and patentee of a continuous length process of manufacturing solid rubber tires, and though he experimented on the plan while in Chicago, it was in this city that the process was perfected. The patent was assigned to the Firestone Tire and Rubber Co., and has been the means of quite a saving to manufacturers in that it prevents loss by manufacturing tires in certain sizes to suit different wheels.

The annual meeting of the Aladdin Rubber Co. resulted in the old board of directors being chosen again, as follows: James Christy, Will Christy, John Connor, Cassius M. Gilbert, C. S. Heller. The officers were reëlected as follows: James Christy, president; Cassius M. Gilbert, secretary and treasurer; Sidney Connor, assistant secretary and treasurer; C. S. Heller, superintendent. The company expect to begin reclaiming rubber by the Heller system by February 15. The boiler for the new plant at Barberton has been installed, and only several small machines are still lacking.

A gratifying evidence of the healthy situation of the bicycle trade was found in the receipt the first of the month by the Diamond Rubber Co. of an order for a carload lot of bicycle tires, from the Pacific Coast Rubber Co., of Tacoma, Washington, and Portland, Oregon. This is said to be the first carload lot order for bicycle tires ever sent to the Pacific coast, and the manufacturers will make the shipment with the car bedecked with banners and gay colors. The Diamond company have been doing a large business in bicycle tires, and as achievement has been their argument, the order is taken as a most encouraging sign for the trade in general.

The rubber industry has built up another here that is auxiliary to it, and is becoming an important factor in the commercial world—the manufacture of machinery for the manufacture of rubber goods. Rubber goods have taken on such a variety of forms and uses, that it has become necessary to manufacture numerous styles of molds. The Williams Foundry and Machine Co. is one of the later manufacturers of rubber machinery. It has found it necessary to extend its plant, especially on account of the demand for automobile and bicycle tire molds. The company has installed a new 42 inch lathe, weighing 12 tons, to be used in finishing molds, and before that a 26 ton planer.

On account of present lack of facilities and the large opportunities for business, the Adamson Foundry and Machine Co. are looking for a new location, on which to erect a more extensive plant. The main reason of Mr. Adamson, the owner of the works, for establishing a new factory, is that he has a large market for rubber machinery, and is desirous of giving his time more exclusively to that work, and of manufacturing heavy rubber machiney to a larger extent. Hitherto the output of the plant has been confined mainly to small machines. The company lately supplied the Firestone Tire and Rubber Co. with six hydraulic presses, and have since received an order from the same company for a large accumulator.

A pneumatic baseball is the latest novelty in rubber manufacturing. It naturally follows the introduction of the pneumatic golf ball, which sprang into such favor last season. The principle of construction is practically the same, except that the baseball is larger, and that it has a leather covering similar to the regulation baseball. The rubber interior of the baseball is wrapped with thread and on top of the thread the leather is placed. The pneumatic and regulation baseballs are so much alike in appearance that such an expert as "Napoleon" Lajoie, manager of the Cleveland "Nationals," and Pitcher Bernard, of the same club, could not tell the difference after practicing for two hours with both kinds.

At the annual meeting of the Akron Rubber Co. made up practically of the same shareholders of The B. F. Goodrich Co. on January 10, the old officers were reëlected: Colonel George T. Perkins, president; George W. Crouse, vice president; C. B. Raymond, secretary; B. G. Work, treasurer; F. H. Mason, general superintendent.

NEW GOODS AND SPECIALTIES IN RUBBER.

COLDREN'S LIPPED JAR RINGS.

THE illustration shown herewith relates to a lipped jar ring, for use on the regular and mammoth size Mason fruit jars, showing both the form of the ring and the use for which it is designed. As will readily be seen, such a ring is designed to facilitate the removal of the jar cap, which is not always the easiest matter in the world. The same company manufacture a new patented cap for Mason jars, which is referred to as having several advantages as compared with the old style cap, not the least of which is the ease with which it may be cleaned. [The Coldren Rubber Co., Lebanon, Pennsylvania.]

THE "CLINCHER" BLOCK TIRE (CHARY'S PATENT).

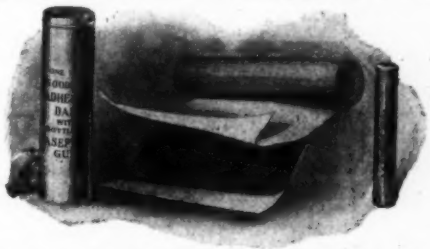
ONE notable recent improvement in tires is the "clincher" block tire. This is designed especially for motor omnibuses and heavy commercial work. The tire is composed of separate rubber blocks, fixed securely by interlocking steel frames, bolted to the wheel rim. Among the distinct advantages are the absence of side-slip and the ease of repair. The side-slip is prevented by the arrangement of the blocks in two parallel rows, with the spaces between the ends of any two sections in the same row opposite the adjacent section in the same row. As to repairs, any block damaged can be replaced in two or three minutes at a cost hardly worth reckoning. Its economy in wear is shown in the fact that the recorded wear amounts to only one-fifth of one inch in 4370 miles of running under a full load of five or six tons. Another feature is the avoidance of heating. The separation of the blocks prevents the overheating which takes place with endless tires, causing disintegration and soon rendering them useless. The stress is reduced to a minimum by the division of the mass of rubber into separate blocks, allowing the heat generated to get away by radiation and conduction. [North British Rubber Co. Limited, Edinburgh, Scotland].

MULTICOLOR RUBBER TILING BLOCKS.

INTERLOCKING tiling of rubber has long been made in a variety of colors and in beautiful designs, but the practice heretofore has been for each separate block to be of one color. It is interesting, therefore, to note that a departure from that rule has been successfully inaugurated by the United Berlin-Frankfort India Rubber Co., of Germany. After considerable experimenting, they have succeeded in producing individual blocks, each one of which contains several colors, so blended that the effect is that of veined and colored marble. In order to see how the colors would stand under vulcanization, blocks were cured till the rubber was practically vulcanite, and there was no diminution in the brightness of the coloring.

GOODRICH ADHESIVE DAM.

THE illustration relates to a very convenient and useful outfit, consisting of a roll of adhesive dam packed with one bottle of aseptic gum, the whole being placed in a round tin case. The dam is put up in a roll, 7 inches wide and 36 inches long. The adhesive surface being covered with tinfoil. [The B. F. Goodrich Co., Akron, Ohio.]



AN OVERSHOE PROTECTOR.

CHARLES W. LINTHICUM, of the Baltimore rubber shoe trade is the patentee of a device intended to prevent snow, water or mud, from getting over the top edge and into the interior of an overshoe. It is designed especially for a combination boot and overshoe such as is commonly used by lumbermen and generally in cold countries. The "protector" is so constructed and of such material that it adjusts itself to various sizes and thicknesses of boots to form a tight joint between protector and shoe below the upper edge of shoe. Comparatively low shoes may be used in combination with a felt boot and the same advantage obtained as in a high overshoe and felt boot combined, thus reducing the cost of the combination boot and overshoe as a whole. The protector being made of yielding soft material, in combination with an elastic goring, it conforms to the shape and different positions of the boot in front, upon the back, and upon the sides.

THE NEW "TAURIL" STEAM PACKING.

THERE is now being introduced into the United States a new packing called "Tauril," designed especially for resisting high pressure steam. It is light, tough, and acid proof, and resists steam temperatures of 572° F. or more. Strength tests made with it show that it will bear a crushing strain of 32,950 pounds, and a tensile strain of 6863 pounds to the square inch. It is claimed that it requires

over 2000 atmospheres to disintegrate this packing, which is a far higher steam pressure than is ever used in practice. It is made in sheets of any thickness, down to $\frac{1}{32}$ of an inch, and is especially recommended for motor car joints. [Ungarische Gummiwaren-Fabriks, A.-G. (Hungarian Rubber Goods Factory, Limited) Budapest.]

READ'S HORSE TAIL TIE.

THE sale is reported within six months of over 500,000 rubber lined horse tail ties, the design of which is readily indicated in the accompanying illustration. It is made without hinge or buckle, or leather strap to stretch, shrink, or break. Nor are there any metal teeth to deaden or cut the hair. It is quickly applied or removed with the gloves on if desired. It is made of special oil tempered spring steel, heavily nickled, and lined with corrugated rubber. [O. B. Read Manufacturing Co., Troy, New York.]

NEW TRADE PUBLICATIONS.

THE HARTFORD RUBBER WORKS CO. have issued many good catalogues, but hitherto they have been devoted chiefly to rubber tires. Now comes a bulky but attractive catalogue of their Mechanical Rubber Goods—a department which has been developed to important proportions, without detracting from their continued attention to tires. The catalogue opens with the subject of Hose, treated very fully, in connection with the company's great variety of products in this line—air brake, steam, air drill, garden, conducting, brewer's, armored, acid, gas, pneumatic tool, fire department, and so on—calling for 43 illustrations. The list embraces also belting, packing, gaskets, valves, mats and matting, heels and many molded specialties, and also tire and insulating tape. [6½″×8½″. 128 pages.]

GORHAM RUBBER CO. (San Francisco) have issued a price list of Belting, Packing, and Hose, embracing the products of the Gorham factory, with the addition of brass goods and other accessories. The Gorham company have been active in developing an export trade, and a page view is given of their store at Osaka, Japan. [4½″×6¾″. 72 pages.]

THE NORTH BRITISH RUBBER CO., LIMITED (Edinburgh), now nearing the fiftieth year of their manufacture of India-rubber boots and shoes, issue a catalogue of such goods, which is most effectively illustrated. The cuts are printed in colors to indicate as nearly as possible the appearance of the goods. [5½″×8½″. 24 pages.]

THE UNITED STATES RUBBER CO.'s advertising department issues, for the season of 1906, the customary series of illustrated and priced catalogues of Rubber Boots and Shoes, a separate one devoted to the products of each of the subsidiary companies. The catalogues are uniform in size of page, but not otherwise. All are attractively got up, outside and inside, and are models of good catalogue making in their field. The catalogues received are those of the American Rubber Co., Joseph Banigan Rubber Co., Boston Rubber Shoe Co., L. Candee & Co., Goodyear's India-Rubber Glove Mfg. Co., Goodyear's Metallic Rubber Shoe [Wales-Goodyear] Co., Jersey Rubber Co., Lycoming Rubber Co., Meyer Rubber Co., (including also the Jersey Co. brands), and Woonsocket Rubber Co. The new prices will receive further attention on another page.

HOOD RUBBER CO. (Boston) issued under date of January 2 their catalogue of Rubber Boots and Shoes, illustrated with cuts of their leading styles. The production of this company has become not only very varied, but also very large, the capacity being mentioned as 48,000 pairs per day. [3¼″ × 6⅛″. 64 pages.]

BANNER RUBBER CO. (St. Louis) issue a catalogue of Rubber Boots and Shoes which, in addition to describing their output, gives full details of their selling arrangements, as they deal with retailers. [9¼″ × 4½″. 46 pages.]

ALSO RECEIVED.

JENKINS BROTHERS (New York).=Extra Heavy Valves. 12 pages.

The St. John Rubber Tire Co. (No. 116 Broad street, New York.) =St. John Non-Puncturable Solid Rubber Cushioned Automobile Tire. 12 pages.

ADDITIONAL TRADE NOTES.

THE ELKHART RUBBER WORKS are a new concern established at Elkhart, Indiana, for the manufacture of mechanical rubber goods and molded specialties.

=A report which currently in the month at the rubber factory of L. Candee & Co., (New Haven, Connecticut) would be removed to Naugatuck, is authoratively denied.

=During the 25 years the Hohmann & Maurer Manufacturing Co. (Rochester, N. Y.) have been making thermometers for industrial purposes, they have several times been obliged to move to larger quarters to accommodate an increasing demand. To provide for further growth, they have purchased a tract of 4 acres on which they have erected a model manufacturing plant, with 65,000 feet of floor space, or three times their former capacity. The building has a frontage of 280 feet, and is arranged in the form of the letter E, so that the manufacturing is done in four wings, each 40 feet wide, thus affording plenty of light. The building is located on the line of the New York Central railroad, having its own switch for shipping purposes. The space needed for handling the office work alone is 130×40 feet. The building not only trebles their capacity, but gives the company many other advantages.

SAWYER BELTING CO. — REMOVAL.

THE Sawyer Belting Co., formerly of East Cambridge, Massachusetts, have removed their office and plant for the manufacture of Sawyer improved canvas belting to Cleveland, Ohio. The manufacturing capacity of the new plant is larger than the old and improved machinery has been added. On account of nearness to the coal fields the power cost is cheaper and there are assurances of a plentiful supply of help and better shipping facilities. The company caters largely to the western and jobbing trade and large consumers in the central states. The selling department is managed by Mr. George W. Taite, who was connected with the company at the old address; the manufacturing end is attended to by Mr. William Schneider, superintendent, and Mr. Amos Pettingel, in charge of the stitching department.

NEWS OF THE AMERICAN RUBBER TRADE.

ATLANTIC RUBBER SHOE CO.

AT a special meeting of stockholders of the Atlantic Rubber Shoe Co., on December 20, 1905, the capital stock of the company, which was $10,000,000, consisting of $2,500,000 preferred, and $7,500,000 common, was reduced to $800,000, being divided into $500,000 preferred and $300,000 common. This was done by reducing the par value of the shares, the number remaining the same. On January 3 at the annual meeting of stockholders of the company the following were elected directors for one year: Latham A. Fish, John H. Flagler, George D. MacKay, Frank N. White, Joseph O. Stokes, John R. Hegeman, Edward H. Litchfield, Thomas B. Hidden, G. Trowbridge Hollister. At a meeting of the directors, in New York, on January 24, John H. Flagler was elected president; George D. MacKay, vice president; and George W. Palmer, secretary and treasurer.

UNITED STATES RUBBER CO.—DIVIDENDS

THE board of directors of the United States Rubber Co., on January 4, declared a dividend of 2 per cent. upon the First Preferred stock (including all the preferred stock now outstanding) for the quarter beginning October 1, 1905, and a dividend of 1½ per cent. upon the Second Preferred stock for the same quarter, from the net earnings of the company, such dividends being payable, on January 31, without closing of transfer books, to shareholders of record on January 15. The net earnings for the first nine months of the fiscal year (December partially estimated) are stated to be approximately $3,162,000, without reference to dividends on the Rubber Goods Manufacturing Co. stock, excepting for one-quarter upon Preferred stock in the company's treasury. The net earnings for the corresponding period last year were $3,140,312.67.

A circular issued by Drake, Mastin & Co., stock brokers of New York, follows:

WE submit herewith for the information of our friends and others who may be interested, a condensed statement which we consider a conservative forecast of the probable result of the business of the United States Rubber Co. for the fiscal year ending March 31, 1906:

Estimated net earnings of the United States Rubber Co.....		$3,500,000
President Dale of the Rubber Goods Mfg. Co. (an auxiliary of the United States Rubber Co.) estimates that the net earnings of that company will be for the same period $2,500,000 of which there will accure to the United States Rubber Co.....		1,836,000
Estimated total net income.....		$5 336.000
Less 8 per cent. on $28,640,300 1st preferred stock	$2,291,224	
Less 6 per cent. on $8,447,300 2d preferred stock	508,638	$2,799 862
Surplus applicable to dividends on common stock.....		$2,536,138
Equal to about 11 per cent. on $23,666,000 common stock of the United States Rubber Co. outstanding.		

THE SPECIAL MEETING.

AT the special meeting of shareholders of the United States Rubber Co., held on January 3, the proposed amendments to the by laws were adopted—in relation to increasing the board of directors to 21, and modifying the details of bond issues and allottment of dividends. The by-laws already in force provided for 19 directors, and as only 17 were elected at the last annual meeting, two additions to the board were made at the special meeting: Charles H. Dale, president of the Rubber Goods Manufacturing Co., and Arthur L. Kelley, a director in the same company and president of the Mechanical Fabric Co. (Providence, RhodeIsland).

BISHOP GUTTA-PERCHA CO. (NEW YORK).

AT the annual meeting of the shareholders of this company, held on January 10 at the office of the company, No. 420 East Twenty-fifth street, the following persons were elected directors: Henry A. Reed, William Boardman Reed, Henry D. Reed, Louis F. Reed, and Ellen I. Anderson, the list being the same as last year except that Louis F. Reed succeeds Amos A. Browning. Henry A. Reed was reëlected president and treasurer, and William Boardman Reed, vice president. Louis F. Reed was reappointed secretary and Henry D. Reed, superintendent. The usual semi annual dividend of 5 per cent. was declared.

THE GORHAM RUBBER CO. BEYOND THE PACIFIC.

THE Gorham Rubber Co. (San Francisco, California), with typical enterprise, have opened a depot for the sale of their goods in the important city of Osaka, Japan, where they carry a large stock of mechanical rubber goods, druggists' sundries, and bicycle tires, all in charge of a resident Japanese who has been most successful in disposing of their goods.==Mr. E. H. Parrish, vice president of the Gorham company, is now touring the Far East. Not in an automobile but on two big grips containing samples of bicycle tires and other productions that the company so successfully market. When last heard of he was on his way from Australia to the Straits Settlements, and from there he goes to China, the Philippine Islands, and Japan before returning home.

SEMICENTENNIAL OF THE TYER RUBBER CO.

THIS year will complete the first half century of the Tyer Rubber Co. (Andover, Massachusetts), the business having been founded in 1856 by Henry George Tyer, an English gentleman who began to devote his inventive genius to India-rubber in New Jersey, in 1840. The chief product of the Andover factory, at first, was what was called the "Compo" shoe, made of leather and cemented together with Gutta-percha by a process invented by Mr. Tyer. Later he secured a palent for the "Congress" arctic which was acquired by the Wales-Goodyear Shoe Co. In 1866 Mr. Tyer began to make rubber druggists' sundries, in which line he developed many improvements, this becoming in time the chief product of the factory. In 1876 the business was incorporated as the Tyer Rubber Co., Mr. Tyer filling the office of president until his death, in 1882. He was succeeded as president by his son, Horace H. Tyer, and in the same year John H. Flint was elected treasurer, and under their combined management the company's business has shown a constant growth and solidity. The company's staff meanwhile has grown in size and efficiency, but this paragraph must close with the mention of Frederick H. Jones, who, beginning with the company 20 years ago, has risen to the position of general manager.

TREDAIR RUBBER CO. ABSORBED.

THE suits between the Foster Rubber Co., Tredair Rubber Co., and Regal Shoe Co. (all of Boston), for infringement of patents, have been amicably settled. The Tredair Rubber Co. (incorporated in Maine in November, 1904, with $100,000 capital authorized) goes out of business altogether. The Regal Shoe Co. becomes by agreement one of the large customers of the Foster Rubber Co., and will carry the "Foster" heels and heel cushions exclusively in all their stores. The products heretofore manufactured by the Tredair Rubber Co. will be supplied to the trade hereafter by the Foster Rubber Co., and the latter, as owners of both Foster and Tredair patents, state that they will prosecute more vigorously than ever their claims and bring suits against all infringers. The Foster company are large producers of molded rubber goods, such as rubber heels, heel cushions, soles, crutch tips, and hoof pads. They are patentees of the so called "Friction Plug" specialties, in which a special fabric is vulcanized into the wearing surface of heels, soles, and the like, with a view to the prevention of slipping and giving longer wear. What has been known as the Foster heel cushion will now be marketed as the "Foster-Tredair" cushion. It fits inside the shoe, under the heel of the wearer, and is preferred by many to an elastic heel outside the shoe. It is stated that over 500,000 of these cushions were sold last year.

THE INDUSTRY PROSPEROUS IN TRENTON.

THE past year was a prosperous one for the rubber industry at Trenton, New Jersey. An estimate made by the *True American* newspaper places the value of rubber goods made there during 1905 at $6,000,000—a larger figure than in any former year. Profits, perhaps, were not proportionately large, owing to the high cost of materials. There were no strikes during the year; none of the factories was shut down at any time except for repairs; most of the factories were run overtime for part of the year; and there was an increase in the number of employés. Important additions were made to several factories, and much new machinery was installed, both in the way of extensions and improvements.

A SYNTHETIC RUBBER FROM OHIO.

THE Wright Rubber Manufacturing Co. (Mansfield, Ohio), manufacturers of "crude rubber," as a special favor to THE INDIA RUBBER WORLD have forwarded a small sample of their synthetic gum, with the understanding that it does not go out of the editorial possession. The gum in color is something like fine Pará rubber, but much "shorter," suggesting Ceará rubber in its texture. When burned it seemed to the Editor to have a slight smell of rubber. This is not written, however, as an expert valuation of the gum, as the Editor had a slight cold and the office boy, who had none, was unable to detect any such rubber smell. A later communication from the Wright company states that the product is the invention of Mr. E. E. Wright, who is the president of the company, and is the result of four years of experiment; that there is no rubber at all entering into the compound, that it will vulcanize to any hardness; and that they have recently completed a dental plate which has been satisfactory in every way. He does not say definitely whether the dental plate was made wholly of his product, or partly crude rubber.

STANDARD UNDERGROUND CABLE CO. (PITTSBURGH).

THE annual report presented at the shareholders' meeting on January 23 showed gross business for 1905 of $12,997,124, which was much the largest figure in the history of the company. Indeed, the business showed an increase of about 50 per cent. over 1904. Out of the net earnings the usual dividends of 3 per cent. quarterly were paid, and a liberal charge made for depreciation of plant. Unfilled orders on hand on December 31 and booked up to date aggregate $1,700,000. The directors were reëlected, as follows: Mark W. Watson (president), Joseph W. Marsh (vice president and general manager), John Moorhead, Jr., John B. Jackson, B. F. Jones, Jr., Robert Pitcairn, J. N. Davidson, William A. Conner, and L. W. Dalzell.

REVERE RUBBER CO EMPLOYES' "FOURTH ANNUAL".

THE fourth annual banquet of the clerks and salesmen of the Revere Rubber Co. (Boston), on the evening of January 26, as usual, was well attended and was a thoroughly enjoyable affair. After dinner Mr. Henry C. Pearson, Editor of THE INDIA RUBBER WORLD, gave a talk on "A Trip to Central America," with stereopticon views of Nicaragua, Costa Rica, and Panama, including many that were of interest from the rubber standpoint. The dinner was at the Hotel Essex, Boston.

GRADING OF RUBBER SCRAP.

THE new regulations adopted by the Paper Stock Dealers' Association of Philadelphia, for the grading and packing of various forms of stock traded in by its members, contain details relating to rubber scrap. These involve little change in rules for grading rubber from the practice of the whole trade in recent years, but the list to-day embraces very many kinds of rubber which, a dozen years ago, would not have been available for reclaiming—a fact suggestive of the progress and improvement that have been made in rubber reclaiming. The Philadelphia regulations follow:

Rubber Boots and Shoes.—Must be dry, free from leather, arctic cloth tops, brass nails and brass eyelets.

White Rubber.—Must be free of metal, cloth lined water bags, cement and fiber wringer rolls and colored stock.

Mixed Black Rubber.—Must be soft and pliable, free from fiber, metal floor mats and packing.

Matting and Packing.—Must be free from belting, metal and all other substances foreign to rubber.

Hose.—Must be soft and pliable, rubber lined, covered and free from metal.

Cotton Jacket Fire Hose.—The lining of which must be elastic.

Mixed Inner Tubes.—Must be elastic and free from cloth and metal.

Pneumatic Bicycle and Automobile Tires.—Must be free from wire and dried out rubber.

Solid Wagon Tires.—Must not contain baby carriage tires, iron or wire.

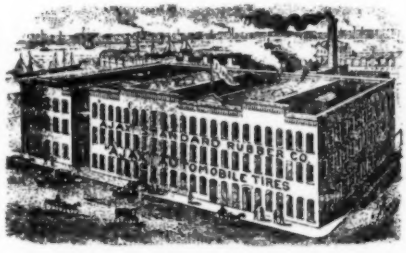
Tare.—Tare will not be allowed on rubber scrap of any description.

NEW INCORPORATION.

BRECK RUBBER CO. (Springfield, Mass.), January 10, 1906, under Massachusetts laws; capital, $5000. James R. Breck, president; Frank G. Wooden, treasurer; Charles G. Breck, clerk. These constitute the board of directors. Some time ago the firm of Breck Brothers, dealers in rubber goods, made an assignment to Mr. Wooden, an attorney, and the creditors have agreed to have the business continued as a corporation.

AJAX STANDARD RUBBER CO.

A NEW rubber tire factory is being developed within the limits of New York city—on upper Manhattan Island in fact—by the Ajax Standard Rubber Co., incorporated November 11, 1905, under the laws of New York state, with $100,000 capital. The president of the company is Horace DeLisser and the treasurer Robert A. Patteson. The factory is being installed in the building Nos. 420-430 East One Hundred and Sixth street, which is near East river.



FACTORY OF THE AJAX STANDARD RUBBER CO.

The superintendent is Louis Destribates, formerly with the International A. & V. Tire Co. (Milltown, New Jersey). Mr. DeLisser informs THE INDIA RUBBER WORLD that the shareholders in the company are practically the members of the American Motor Car Manufacturers' Association—the organization of manufacturers refusing to recognize the George B. Selden patent (United States, No. 549, 160). Mr. DeLisser mentioned that first tires had been turned out on January 16.

DUNLOP "RUBBER DINNER" AT TORONTO.

THE staff of the Dunlop Tire and Rubber Goods Co., Limited (Toronto, Ontario), were entertained on the evening of January 4 at a "Rubber Dinner" by Mr. John Westren, general manager of the company The dinner is an annual event, but it proved more interesting this year in view of the recent growth of the business and the installation of the new factory, which was described in the December INDIA RUBBER WORLD. The menu card was humorous in character, as indicated by the description of the roast, in the following lines:

Said the boarder a rest I shall take,
For this must be a Dunlop beefsteak,
Though its springy to feel—
Like a good rubber heel—
It will neither rip, tear, crack nor break.

"GWENDOLEN."

THE Goodrich Gwendolen is certainly a beauty. It stands on par with the galaxy of beautiful portraits that, for years past, The B. F. Goodrich Co. have presented to their friends. In the little ornamental flyer that accompanies the picture is a miniature of Gwendolen and it seems that the picture of the young lady is addressed to the "Man who holds the rudder," and it requires no stretch of imagination to picture a mariner rising from the briny depths, grasping firmly a slippery rudder, and forgetting all of his peril as he sees Gwendolen beaming down upon him from the stern of the boat.

SEWARD RUBBER CO. ORGANIZED.

THE first meeting of the board of directors of the Seward Rubber Co. was held in Hartford, Connecticut, on January 15, when William Seward was elected president, Edgar L. Hopkins, treasurer, and W. J. Sturgis, secretary. THE INDIA RUBBER WORLD is informed: "All possible energy is being used to complete the equipment of the factory, which is located at Berlin, Connecticut, and it is hoped that samples [of tires] will be out by the middle of March and that deliveries can begin to be made early in April."

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES.	Common. Sales.	High.	Low.	Preferred. Sales.	High.	Low.
Week ending Dec. 23	13,150	55¼	52½	1,685	111¼	109¾
Week ending Dec. 30	11,570	54	49⅞	2,640	110	108¾
Week ending Jan. 6	10,850	54	51	1,700	111	109½
Week ending Jan. 13	15,605	54¾	52¼	3,520	114	111
Week ending Jan. 20	30 250	57	54⅜	6,271	115	112⅝

SECOND PREFERRED.

WEEK ending—Dec. 23.	Dec. 30.	Jan. 6.	Jan. 13.	Jan. 20.
Sales..... 3,200	1,200	6,400	4,010	6,000
High 83¼	83	85	85⅞	87½
Low..... ... 81½	81	83	84¼	86¼

FIRST PREFERRED STOCK, $28,705,800.

Last Dividend, October 31, 1905—2%.

	1901.	1902.	1903.	1904.	1905.
Shares sold	132,278	104,202	62.343	182,443	200,497
Highest price.....	85	64	58	100	118½
Lowest price.....	47	49½	30¼	41	98⅜

SECOND PREFERRED, $8,477,300.

Last Dividend, October 31, 1905—1½%.

	1905.
Shares sold.....	21,550
Highest price	83¾
Lowest price.....	75

COMMON STOCK, $23,666,000.

Last Dividend, April 30, 1900—1%.

	1901.	1902.	1903.	1904.	1905.
Shares sold	318,038	53,356	80,890	285,819	723,665
Highest price.....	34	19⅜	19⅛	34½	58⅛
Lowest price.....	12½	14	7	10½	33¾

RUBBER Goods Manufacturing Co.:

DATES.	Common. Sales.	High.	Low.	Preferred. Sales	High.	Low.
Week ending Dec. 23	700	41½	40⅛	100	105	105
Week ending Dec. 30	280	41¾	40⅛	—	—	—
Week ending Jan. 6	400	42	42	—	—	—
Week ending Jan. 13	100	43	43	25	105	105
Week ending Jan. 20	—	—	—	100	106¼	106¼

PREFERRED STOCK, $9,051,400.

Last Dividend, December 15, 1905—1¾%.

	1901.	1902.	1903.	1904.	1905.
Shares sold.....	18,541	39,582	55,280	25,864	46,806
Highest price.....	90	74	64½	98	109⅛
Lowest price.....	65	63	60	74⅜	94

COMMON STOCK, $10,351,400.

Last Dividend, July 15, 1901—1%.

	1901.	1902.	1903.	1904.	1905.
Shares sold.....	172,631	339 895	276,789	369,347	459,373
Highest price.....	38¼	25⅜	30	29⅞	41¾
Lowest price.....	18	17¼	12	14¼	24¼

AMERICAN DUTIES ON RUBBER SPONGES.

A DECISION in the United States circuit court, southern district of New York, January 10, 1906, in the matter of the protest of Alfred H. Smith Co. (New York) against the assessment of duty at 30 per cent. *ad valorem* on imports of rubber sponges—the importer claiming that they should be assessed as "sponges" at 20 per cent. *ad valorem*—sustained the action of the collector. The court held that

"sponges," in the meaning of the law, embraced only natural sponges of aquatic origin.

TRADE NEWS NOTES.

THE Shelby Rubber Co. (Shelbyville, Indiana), mentioned in our last issue as having been incorporated, with $100,000 capital, advise THE INDIA RUBBER WORLD that their object is to engage in manufacturing automobile tires, with other carriage rubber goods, and also automobile tops. D. F. Randolph is president; J. F. Meloy, vice president; Olin S. Peck, secretary; and Thomas J. Marshall, treasurer.

=The New England Rubber Club are planning to hold their Midwinter Dinner on February 19 at The Exchange Club, Boston. Among distinguished speakers who are expected to be present are the Hon. William M. Ivins, of New York, the Hon. Samuel W. McCall, congressman from Massachusetts; the Hon. John N. Cole, speaker of the Massachusetts house of representatives, and others.

=The Hood Rubber Co. (Boston) declared their regular quarterly dividend of 2 per cent. at the beginning of the year.

=The large additions to the plant of The Fisk Rubber Co. (Chicopee Falls, Mass.), referred to in THE INDIA RUBBER WORLD October 1, 1905 (page 25) are practically complete and will, it is reported, increase the factory capacity by 25 per cent.

=Several of the rubber shoe factories during the month have been run only 9 hours a day instead of 10, the open winter having pointed to a decreased demand for waterproof footwear. Near the end of the month some of the mills reducing the working week to five days.

=The trustees for the holders of the first mortgage 6 per cent. bonds of the Mechanical Rubber Co. have advertised their readiness, under the terms of the mortgage, to expend $61,190.78 in the purchase of bonds, provided the same can, in their opinion, be made advantageously, on or before February 15, at the offices of The Knickerbocker Trust Co., New York.

=The National India Rubber Co. (Bristol, Rhode Island) have changed their weekly pay day from Monday to Saturday.

=The directors of the Warren Rubber Co., a jobbing concern of Warren, Ohio, on January 11 declared a yearly dividend of 10 per cent. and made a handsome addition to the surplus fund.

=A. W. Brunn (Nos. 2-4 Stone street, New York) announces taking into partnership Mr. L. P. MacMichael, for many years connected with the crude rubber trade, under the style A. W. Brunn & Co. The firm will continue as agents for foreign houses, brokers and dealers in India-rubber, Gutta-percha, Pontianak, and Balata, and also waste rubber.

=The Continental Rubber Works (Erie, Pennsylvania) of late have been running their factory 24 hours a day, largely on bicycle tires.

=The Chicago authorities have advertised for bids for supplying about 1500 square feet of rubber mats for the new Cook County court house, mostly to be placed in front of the elevators. "No special brand is specified," we are informed, "but all mats must be guaranteed."

=The Housatonic Rubber Works (Bridgeport, Conn.) have certainly done themselves proud in their calendars this year. The two pictures, "Narcissus," and "Resignation," are exceedingly attractive.

=M. Norton & Co., dealers in rubber scrap (Charlestown, Mass.), have completed plans for a large storehouse on the site of their Rutherford avenue plant, covering 5000 square feet, 5 stories, brick, with 7 foot basement. They now have a warehouse in Medford 120×80 feet, 2 stories, with about 2 acres of yard room for storage of machinery, and have been handling on an average from three to five cars of rubber scrap per week.

=Mr. Winfield S. Knowles, of The Globe Rubber Works (Boston), is happy over the fact that during the last year he practically doubled his New England business.

=The suit of the Thomas Philips Paper Co., Akron, Ohio, against The Diamond Rubber Co., for $25,000 damages, for the alleged pollution of the canal by the latter, was dismissed in the Akron common pleas court, on January 8, at the cost of the plantiff.

=Hood Rubber Co., (Boston) lately distributed to the trade a folder showing twelve views of their rubber shoe factory at East Watertown, Mass., illustrating their growth during 10 years. The figures accompanying the figures may be summarized as follows:

	1896.	1906.
Floor area (square feet)	67,564	389,107
Daily production (actual pairs)	3,000	46,000
Number of factory employés	225	3,100

=In its annual estimate of the value of electrical apparatus produced in the United States, for 1905, the *Electrical World* (New York) puts down "Insulated wires and cables and submarine cables" at $40,000,000. Its estimate of the value of the same product in 1904 was $35,000,000, and in the year proceding $30,150,000. Its total estimate of electrical apparatus made in the three years is as follows: $158,650,000 in 1903; $175,500,000 in 1904; $217,400,000 in 1905.

=At a meeting of the board of fire and police commissioners of Omaha, Nebraska, on January 3, contracts were let for 30,000 feet of 2½ inch fire hose, divided equally between the New York Belting and Packing Co., Limited (Central Western representatives of the Fabric Fire Hose Co.), and The Eureka Fire Hose Co.

=The Mann Summer Clothing Co., manufacturers of raincoats, have recently moved into their new Brooklyn factory, at the corner of Pitkin avenue and Junius street.

=James Boyd & Brother (Philadelphia), jobbers of mechanical rubber goods, issue this year as usual a neat memorandum pad calendar, one page for each week, together with some useful reference tables.

=R. R. Rothwell succeeds Walter Leatherow as factory superintendent of the Rubber Balloon Co. of America, at Newark, New Jersey.

=King & Leatherow, Limited, the new firm at Newark, N. J., mentioned in the last INDIA RUBBER WORLD, are installed at Nos. 3-5 Burnett street, in a factory excellently fitted for their work, which is the manufacture of toy rubber balloons and a full line of surgeons' goods.

=The Beacon Falls Rubber Shoe Co. are reported to have received an important order for rubber shoes for Turkey, to be manufactured on special lines.

=The La Crosse Rubber Mills Co. (La Crosse, Wisconsin), are now making a daily ticket of nearly one thousand pairs of rubber shoes.

=A small rubber factory within convenient distance of New York is advertised for sale with full descriptive details, in another part of this paper.

=*Town Topics*—not the New York paper in which so many local millionaires are stockholders, but a breezy paper published in Cleveland, Ohio,—had a fine half page picture of the members of the sales department of the Ohio Rubber Co., in its issue of January 13. But the paper does not say a word about the occasion that brought the talent together. Our first guess was that it was a dinner, and a good one, as they all have a particularly well fed and contented look. And so it proved to be—a reunion for three days, with headquarters at the Hollenden Hotel, December 28-30; a theatre party one night and a banquet the next.

=Some changes have been made in the Boston offices of United States Rubber Co.—No. 101 Milk street—adding to capacity and the attractiveness of the premises. A large and very fine sample room has been built and also a private office for the use of Mr. H. E. Sawyer, general manager, and Mr. E. H. Paine, manager of sales, when they happen to visit Boston.

=Mr. T. W. Miller, general manager of The Faultless Rubber Co. (Akron, Ohio) is taking a three weeks' business trip through the West.

=The L. J. Mutty Co. (Boston) who exhibited at the New York automobile shows a fine grade of rubber cloths and tubing for the automatic piano trade, together with double texture mackintosh cloths for auto tops, cushions, etc., gives away an exceedingly attractive souvenir cardcase and memorandum book bound in fawn coloredpig-skin.

=Michelin & Cie., are doubling the capacity of their plant in France to better enable them to meet the constantly increasing demands of trade. When completed, the remodeled plant will turn out about 1000 tires a day. Mr. E. D. Winans, who has been general manager of the Michelin American Agency, has retired to form a company to manufacture Michelin tires in the United States, under a license from the parent company.

=The Republic Rubber Co. (Youngstown, Ohio) have under construction a rubber reclaiming plant as an addition to their general factory buildings.

=Mr. A. Harris, recently connected with the McCormick Reaper Co., has taken the position of mechanical engineer in the Republic Rubber Co. (Youngstown, Ohio).

=Eagle Rubber Co., Inc., successors to W. L. Eaton & Co., San Francisco, are beginning the manufacture of rubber mold work, making a specialty of valves, gaskets, and the like. They are doing a good business in selling a "Handy Nail Holder," a rubber device for holding a nail so as to protect the finger of the amateur carpenter while wielding his hammer.

"CONTINENTAL" TIRE MEN AT DINNER.

THE third annual banquet of the Continental Caoutchouc Co. (New York) occurred at the Hoffman House on the evening of January 18, President Willy Tischbein, of Hanover, Germany, being the guest of honor. The various distributing agents, branch managers, salesmen, and department managers of the company throughout the United States were in attendance. Interesting business topies were discussed during the evening, in addition to which there was a musical program, and altogether the affair proved most enjoyable.

=The Salisbury Tire Co., with $100,000 capital, have been incorporated to establish a factory for automobile tires at Owosso, Michigan.

RUBBER SHOE PRICES LOWER.

NEW prices for rubber boots and shoes were issued on January 1. The United States Rubber Shoe Co. state that the gross prices on light goods remain the same, but it has been necessary to make some revision of the lists on heavy goods. In some cases the new price is slightly higher, while others have been reduced. The manufacturers take the position that the prevailing high cost of raw rubber, cotton, and the other materials used, precludes a generally lower scale at this time. Discounts are the same announced last year on January 1. They are 25 @ 3 per cent. on first grade goods and 25 @ 3 @ 10 for second grade. On February 8, 1906, discounts were charged to 20@3 and 20@3@10, which amounted to an advance, which prevailed throughout the year. The new discounts, therefore, mean lower net prices than before January 1 by about 6 per cent. on the average. All the leading American manufacturers have issued new lists.==Rubber shoe manufacturers in Canada do not issue new lists or change their discounts until March of each year—generally about the first Monday, which this year will fall on March 5.

PERSONAL MENTION.

MR. WATSON H. LINBURG, president of the United and Globe Rubber Manufacturing Cos. (Trenton, New Jersey), was reported recently as having recovered from a serious illness of *grip*, lasting for several weeks.

=Mr. John P. Lyons, advertising manager of the United States Rubber Co., who is recuperating in California, advises THE INDIA RUBBER WORLD that he is progressing finely and looking forward to warm weather, when he can again be back among his friends.

=Mr. Isaac Crocker, president and treasurer of the Hope Rubber Co. (Providence, Rhode Island), and his son, Mr. George I. Crocker, president of the Crocker Rubber Co. (Brocton, Mass.), started early in the month on an extended tour on the Pacific coast, going via. Santa Fé on the outward trip, and taking in all the points of interest on the coast as far as Seattle. They will return via. Salt Lake City, Denver, and St Louis, intending to reach home in March.

=Mr. A. R. Duryee, superintendent of the rubber factory of Asbest- und Gummiwerke Alfred Calmon, A.-G. (Hamburg, Germany, sends THE INDIA RUBBER WORLD a postal card from France, where he has been taking a brief vacation, at the beginning of which he visited the Paris Automobile Show.

=Mr. Leo F. Nadeau, of the La Nueva Provedencia Rubber Co., with headquarters in Providence, Rhode Island, recently wrote to THE INDIA RUBBER WORLD from Panama, delayed for two weeks until he could catch a steamer to Guatemala. He further wrote that it was as hot as —— the rest of the sentence being illegible.

=Mr. Siegmund Seligmann, one of the directors of the Continental Caoutchouc- und Guttapercha Co. Hannover, Germany), arrived in New York by the *Deutschland* on January 25 and expects to return on February 6. Mr. Seligmann is associated in the business management at Hannover with Mr. Adolph Prinzhorn who has visited America several times. Mr. Seligmann was preceded to the United States by Mr. Willy Tischbein also, of Hannover, who arrived in time to attend the automobile shows. Mr. Tischbein, by the way, is president of the American corporation of the Continental company.

=Mr. Webster Norris has retired from the superintendency of the factory of the Republic Rubber Co. (Youngstown, Ohio), being succeeded by Mr. J. F. McGuire and Mr. Lewis T. Petersen, both of whom were formerly connected with The B. F. Goodrich Co.

=The Metallic Rubber Tire Co. (New York) issue a circular stating that their counsel, Alfred Wilkinson, No. 52 Broadway, New York, has been directed to bring suit against users of the "Samson" and other non-skidding tires claiming infringement of patents owned by the plantiff company, dating back to 1898.

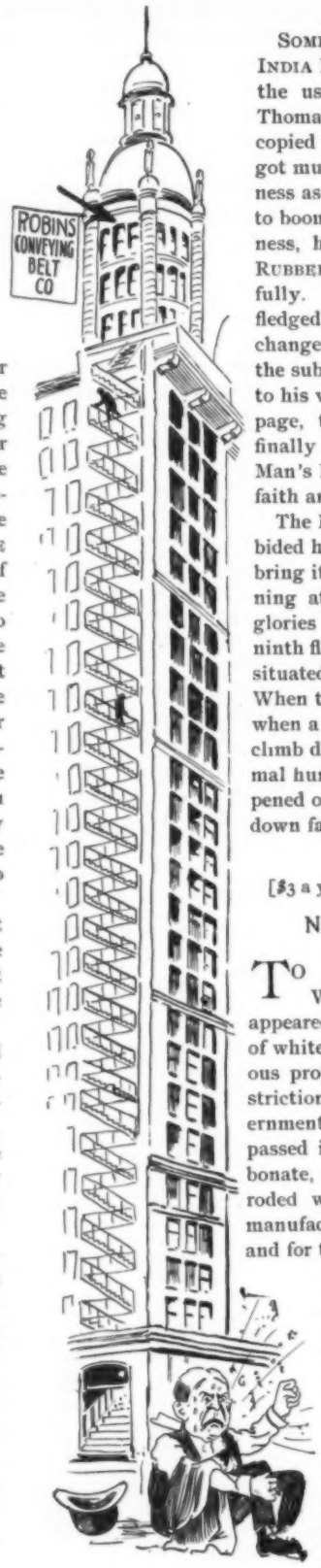
=An attachment obtained by the Goodyear Tire and Rubber Co. (Akron, Ohio) against the New York-Broadway Rubber Tire Co., a selling concern, issued in a suit for damages brought for the alleged failure of the latter to carry out the terms of a contract for the purchase of automobile tires, was vacated in the New York supreme court on January 20. Mention was made in THE INDIA RUBBER WORLD last month of the suit of the New York-Broadway company against the Goodyear Tire and Rubber Co. to recover $150,000 in respect of an alleged breach of contract. The Goodyear concern began a counter suit, and it was in this that the attachment was issued. The attachment in the suit against the Goodyear Tire and Rubber Co. was still in force at last accounts, but an order was on file requiring the New York-Broadway company to serve certain papers before January 30, the Goodyear company having alleged that loss and inconvenience were being caused to them by failure of such service to be made.

=Mr. C. J. Bailey, of Boston, was on hand at both the Armory and Madison Square automobile shows, in New York, and was much gratified at the number of makes of tires that showed the Bailey "Won't Slip" tread.

=The Pneumatic Ball Tire Co., incorporated to make a new tire patented by Frank A. Magowan, who will be general manager of the company, have opened an office at No. 66 Broadway, New York, and are reported to be considering the establishment of a plant in New Jersey. They are now having sample tires made. Frank B. Adams is president of the company.

=Howe Rubber Co. (No. 228 High street, Newark, New Jersey), the incorporation of which was reported in THE INDIA RUBBER WORLD in September last, have a factory fitted up with the latest methods for producing dipped rubber goods. They manufacture toy balloons and toy dolls. E. T. Howe, the head of the company, was until August last the Howe of King & Howe, Limited, of Newark.

=The Miami Vulcanizing and Rubber Co. (Cincinnati, Ohio) have been incorporated under the laws of Ohio, with $5000 capital, by Louis F. Reemelin, Joseph W. Roth, Jr., W. C. Smith, W. W. Robertson, and Thomas Bertham.



ROBINS CLIMBS DOWN.

SOME years ago, or more exactly in 1896, THE INDIA RUBBER WORLD published an article on the use of rubber conveyor belts, written by Thomas Robins, Jr. The article was promptly copied in leading journals abroad and the author got much reputation. Soon after this his business as a builder of conveying machinery began to boom. During the initial stages of his business, he was a constant reader of THE INDIA RUBBER WORLD, and paid his subscription joyfully. When later, however, he became a full fledged prosperous conveyor belter, his attitude changed, not at once to be sure, but slowly, as the subtle poison of eight ply prosperity got into his veins. He began to neglect the editorial page, then trade notes, then new goods, and finally ended in throwing aside the "Rubber Man's Bible," and definitely turning his back on faith and fact, he discontinued his subscription.

The Editor of the paper saddened, but resigned, bided his time, sure that such ingratitude would bring its own punishment. It came, as a beginning at least, and in this manner: Mr. Robins glories in the fact that his office, on the twenty-ninth floor of the Park Row building, New York, is situated higher up in the air than any other. When the elevators run this is no handicap, but when a man forsakes his Mascot, and is forced to climb down 29 flights of stairs to reach the normal human level, it is diastrous. That has happened once. Who can predict what further call down fate has in store for this unhappy man.

"While the lamp holds out to burn,
The vilest sinner may return."

[$3 a year, in advance.]

NOT THE SAME WHITE LEAD.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In one of your recent numbers appeared an article concerning the restricted use of white lead in France on account of its poisonous properties, and further commenting on restrictions enacted along these lines by the government. Your article and the recent laws passed in France refer only to the so-called carbonate, or, as it is more commonly known "corroded white lead." Sublimed white lead, as manufactured by us, is absolutely non poisonous and for that reason is much preferred by manufacturers of rubber and paints. I trust you will give this short note the same publicity as you did the article I mentioned. Very truly yours,

PICHER LEAD COMPANY,
R. W. EVANS, Treasurer.

Chicago, January 13, 1906.

PROBABLY the largest sum of money ever paid for any individual tire patent was $1,000,000 paid to the North British Rubber Co. for their "Clincher" tire patent, the company reserving shop rights, and continuing to make tires.

REVIEW OF THE CRUDE RUBBER MARKET.

THE situation in the trade is not such as to call for any special comment, in view of the amount of detailed information contained in the quotations and statistical tables presented in different parts of this month's paper. Total Pará receipts for the first six months of the season (to December 31) were 14,670 tons—an increase of 1370 tons over the same months of 1904. January arrivals, up to the 29th were 4755 tons (including Caucho) against 4590 tons in the preceding December.

Following is a statement of prices of Pará grades, one year ago, one month ago, and on January 30—the current date:

PARA.	February 1, '05.	January 1, '05.	January 30.
Islands, fine, new	121@122	124@125	122@123
Islands, fine, old	none here	none here	none here
Upriver, fine, new	124@125	129@130	126@127
Upriver, fine, old	none here	none here	none here
Islands, coarse, new	70@71	75@ 76	73@ 74
Islands, coarse, old	none here	none here	none here
Upriver, coarse, new	92@ 93	96@ 97	93@ 94
Upriver, coarse, old	none here	none here	none here
Caucho (Peruvian) sheet	71@ 72	74@ 75	74@ 75
Caucho (Peruvian) ball	80@ 81	91@ 92	86@ 87

AFRICAN.		CENTRALS.	
Sierra Leone, 1st quality	103@104	Esmeralda, sausage	87 @88
Massai, red	103@104	Guayaquil, strip	73 @74
Benguella	84@ 85	Nicaragua, scrap	84 @85
Cameroon ball	72@ 73	Panama, slab	65 @66
Accra flake	26@ 27	Mexican, scrap	86 @87
Lopori ball, prime	113@114	Mexican, slab	63 @64
Lopori strip, prime	96@ 97	Mangabeira, sheet	60 @70
Madagascar, pinky	92@ 93	EAST INDIAN.	
Ikelemba	113@114	Assam	97 @98
		Borneo	45 @49

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine	5$200	Upriver, fine	6$300
Islands, coarse	2$700	Upriver, coarse	4$200

Exchange, 17 3/8*d.*

Last Manáos advices:

Upriver, fine 6$200 Upriver, coarse 3$700

Exchange, 17 1/2*d.*

NEW YORK RUBBER PRICES FOR DECEMBER (NEW RUBBER).

	1905.	1904.	1903.
Upriver, fine	1.23 @ 1.29	1.18 @ 1.30	.93 @ .98
Upriver, coarse	.90 @ .97	.89 @ .97	.76 @ .81
Islands, fine	1.20 @ 1.26	1.14 @ 1.26	.88 @ .94
Islands, coarse	.71 @ .77	.65 @ .72	.54 @ .57
Cametá	.72 @ .78	.65 @ .71	.54 @ .57

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium.	Coarse.	Total. 1905.	Total. 1904.	Total. 1903.
Stocks, November 30...*tons*	154	0 =	154	7	32
Arrivals, December	824	464 =	1288	1705	1502
Aggregating	978	464 =	1442	1712	1534
Deliveries, December	861	459 =	1320	1643	1478
Stocks, December 31	117	5 =	122	69	56

	PARÁ.			ENGLAND.		
	1905.	1904.	1903.	1905.	1904.	1903.
Stocks, November 30...*tons*	395	540	195	505	180	370
Arrivals, December	2985	3220	3185	1090	670	1100
Aggregating	3380	3760	3380	1595	850	1470
Deliveries, December	2795	3560	3010	1025	675	925
Stocks, December 31	585	200	370	570	175	545

	1905.	1904.	1903.
World's visible supply, December 31...*tons*	2589	2444	2979
Pará Receipts, July 1 to December 31	13595	12551	12540
Pará Receipts of Caucho, same dates	1035	779	960
Afloat from Pará to United States, Dec. 31.	652	1520	908
Afloat from Pará to Europe, December 31	660	480	1100

Para Market.

R. O. AHLERS & Co. report [January 2]:

The market has continued to display great firmness, and under the influence of good demand not only has considerable activity prevailed, but the impulse towards higher prices has also exercised its due effect. The simultaneous improvement reported from the consuming markets has likewise contributed to impart additional strength.

Firm Changes at Para.

THE firm Schrader, Gruner & Ca. on January 2 succeeded Cmok, Schrader & Ca., Mr. Franz Hermann Cmok, of Hamburg, retiring from the business. The Manáos branch will be conducted under the style Dusendschön, Nommensen & Ca., instead of Dusendschön & Ca.; as formerly The capital of the business is stated at 2,300,000 milreis. with 500,000 milreis held by Messrs. Heilbut, Symons & Co., of London and Liverpool. The partners in Pará and Manáos are W. R Schrader, K. F. H. G. Gruner, C. L. Nommensen and O. F. A. Dusendschön.

The firm hitherto existing under the style of Kanthack & Co. ceased on December 31, the business being continued on the same line by the new firm of R. O. Ahlers & Co., opened on January 1 under the auspices of the old firm, Mr. Kanthack continuing an interest in the business.

A new Pará firm is Scholz, Hartje & Co. The first name in the firm style is that of Waldemar Scholz of Scholz & Co., at Manaos, The firm embraces also Frederico Hartje; Frank, Arthur, and Luiz da Costa; C. J. de Figueiredo—all well known in the Para rubber trade—and Nicoláo Henrique Witt, long the head of Witt & Co. at Manáos, and now interested in the succeeding firm. Scholz & Co.

London.

JANUARY 19.—The market for Pará rubber has been weaker and lower in consequence of reported good arrivals at Pará, and buyers have shown little disposition to operate. Fine hard was sold on the spot and forward at 5*s.* 4 1/4*d.* down to 5*s.* 3 1/2*d.*; soft fine sold on the spot at 5*s.* 2*d.* Bolivian fine spot sold at 5*s.* 4 1/4*d.* to 5*s.* 3 3/4*d.* Fair scales of Peruvian ball spot and near 3*s.* 7*d.* At to-day's auction medium grades were scarce and met a slow demand and only a part sold at steady rates. Columbian good clean white scrape 3*s* 7 3/4*d.* Madagascar mixed Majunga and black coated slab at 2*s.* 7 3/4*d.* to 2*s.* 10 3/4*d.* Assam plantation rather barky at 4*s.* 3*d.*

Rubber Scrap Prices.

New York quotations—prices paid by consumers for carload lots in cents per pound—show a slight reduction in shoes, as follows:

Old Rubber Boots and Shoes—Domestic	7 3/8 @ 7 1/2
Do —Foreign	6 3/8 @ 6 3/4
Pneumatic Bicycle Tires	6 1/4 @ 6 1/2
Solid Rubber Wagon and Carriage Tires	8 1/2 @ 8 5/8
White Trimmed Rubber	10 1/2 @ 11
Heavy Black Rubber	5 3/4 @ 6
Air Brake Hose	3 3/4 @ 3 7/8
Fire and Large Hose	3 @ 3 1/4
Garden Hose	2 3/8 @ 2 1/2
Matting	1 1/4 @ 1 1/4

Antwerp.

THE regular inscription sale on January 24 was again very large, the offerings amounting to 728 tons. Some of the more important lots, with the brokers' estimations, in francs per kilogram, were:

29,341	kilos	Upper Congo Aruwimi	*francs* 10.25
78,570	"	Upper Congo Aruwimi	10.50
47,315	"	Upper Congo Aruwimi	10.80
8 405	"	Upper Congo Aruwimi	12.00
20,289	"	Upper Congo Aruwimi	10 90
19,779	"	Congo Kasai	11.22½
12.868	"	Congo Kasai	10.25
32 065	"	Congo Kasai	10.25
18,097	"	Congo Djuma	8 00
21,897	"	Upper Congo Uelé	10 65
57,112	"	Upper Congo Uelé	10.65
10,909	"	Upper Congo Uelé	11.40
30,703	"	Upper Congo ordinary	12.12½
10,109	"	Upper Congo Mongalla	11 00
15,930	"	Upper Congo Mongalla	12.10

Very small lots of Lopori and Ikelemba rubbers were offered. A small lot of Straits Settlements crepe (plantation) was estimated at 16 francs (=$1.40 per pound).——The entire offerings are reported to have been sold, presumably upon European account, at prices higher than were expected.

ANTWERP IMPORTS FOR TEN YEARS.

YEAR.	Congo State.	Other Sources.	Total.
1896	*kilos* 1,106,375	9,500	1,115,875
1897	1,557,861	121,293	1,679,154
1898	1,734,305	280,286	2,014,591
1899	2 992,414	410,416	3,402.880
1900	4,902,003	796.032	5,698,035
1901	5,417.456	431,746	5,849,202
1902	4,992,954	411,031	5,403,985
1903	5,180,401	546,082	5,726,483
1904	4,723,618	1,040,238	5.763.856
1905	4,442,607	1,271,121	5,713,728

ANTWERP RUBBBER STATISTICS FOR DECEMBER.

DETAILS.	1905.	1904.	1903.	1902.	1901.
Stocks, Nov. 30. *kilos*	635,296	611,726	680,142	185,961	843.301
Arrivals in Dec.	474 175	581,844	638,158	799,236	204,920
Congo sorts	436 404	460,386	599.945	760,150	182,525
Other sorts	37,771	121.458	38,213	39,086	22.395
Aggregating	1,109,471	1.193,570	1,318,300	985,197	1,048,221
Sales in December	374,284	652,209	707,400	327,092	633,512
Stocks, Dec. 30	735,187	541,361	610,900	658,105	414,709
Arrivals since Jan 1	5,713,728	5,763 856	5,726,483	5,403,985	5,849,202
Congo sorts	4,442,607	4.723,618	5,180,401	4.992,954	5.417.456
Other sorts	1,271,121	1,640,238	546 082	411,031	431.746
Sales since Jan. 1	5 519.805	5,833,395	5,773,668	5.160,589	6.048,442

Ceylon Exports (Plantation Rubber).

DETAILS—BY WEEKS.

	POUNDS.		POUNDS.
January 1 to Nov. 20	121,090	Week ending Dec. 18	7,081
Week ending Nov. 27	1,496		
Week ending Dec. 4	9,229	Total to Dec. 18	140,132
Week ending Dec. 11	1,236	Same period, 1904	87,623
		Same period, 1903	40,921

DESTINATION.

Great Britain	104,069	United States	9,121
Germany	16,234	Australia	1,152
Belgium	9,410	Holland	125

IMPORTS FROM PARA AT NEW YORK.

[*The Figures Indicate Weights in Pounds.*]

January 5.—By the steamer *Amazonense*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
A. T. Morse & Co	216,900	49,500	194 300	500=	461,200
N. Y. Commercial Co.	257,800	48,600	74,300	1,300=	382,000
Poel & Arnold	126,000	24,700	52,700	300=	203,700
General Rubber Co	103,100	34,000	38,500	300=	175,900
Edmund Reeks & Co.	38,200	3,400	9,800	....=	51,400
Hagemeyer & Brunn.	23,600	3,000	8,300	....=	34,900
Neale & Co	1,200	700	36,100	....=	38,000
Constantine P. Santos.	16,200	2,900	600	....=	19,700
Total	78,300	166,800	414,600	2,400=	1,366,800

January 17.—By the steamer *Cearense*, from Manáos & Para:

Poel & Arnold	165,300	59,500	148,500	31,400=	404,900
A. T. Morse & Co	85,600	21,400	106,300	15,800=	229,100
N. Y. Commercial Co.	113,200	21,800	57,100	1,500=	193,600
Neale & Co	45,000	8,500	86,500	....=	140,000
General Rubber Co	93,400	16,600	25,000	600=	135,600
Constantine P. Santos.	59,800	18,500	21,400	1,300=	101,000
Hagemeyer & Brunn	30,000	1,300	23,300	....=	54,600
Edmund Reeks & Co.	19,200	3,600	18,700	300=	41,800
Total	611,500	151,200	486,800	50,900=	1,300,400

January 26.—By the steamer *Grangense*, from Manáos and Pará:

General Rubber Co	229,200	53,600	120,500	6,400=	409,700
N. Y. Commercial Co.	99,900	32,000	91,800	2,700=	225,600
Poel & Arnold	88,700	49,000	67,300	23,100=	228,100
A. T. Morse	46,700	10,400	38,400	3,700=	99,200
Neale & Co	6,700	5,600	32,500	.....=	44,800
Edmund Reeks & Co	23,600	1,100	15,700	7,300=	47,700
Hagemeyer & Brunn	28,000	2,800	15,000	.....=	45,800
Arana Bergman Co	.....	.....	.....	40,200=	40,200
Banco Exportasos	.....	.....	.....	15,000=	15,000
Lawrence Johnson & Co	4,600	1,000	3,500	.....=	9,100
Constantine P. Santos.	3,900	.....	3,900	.....=	7,800
CzarnikowMcDougalCo	4,200	2,300	500	.....=	7,000
Total	535.500	157,800	388,300	98,400=	1,180,000

PARA RUBBER VIA EUROPE.

DEC. 26.—By the *Allianca*=Mollendo:

	POUNDS	
A. D. Hitch & Co. (Fine)	5,000	
Boston & Bolivia Co. (Fine)	1,500	6 500

DEC. 26.—By the *Canada*=Liverpool:

Poel & Arnold (Coarse)	8,500

DEC. 30.—By the *Celtic*=Liverpool:

New York Commercial Co. (Coarse)	7,000

JAN. 4.—By the *Armenian*=Liverpool:

Poel & Arnold (Medium)	56,000	
New York Commercial Co. (Coarse)	2,500	58,500

JAN. 5.—By the *Pennsylvania*=Hamburg:

Poel & Arnold (Fine)	45,000	
Poel & Arnold (Coarse)	22,500	67,500

JAN. 8.—By the *La Gascoyne*=Havre:

Poel & Arnold (Fine)	5,500

JAN. 10.—By the *Bovic*=Liverpool:

Poel & Arnold (Coarse)	9,000

JAN. 12.—By the *Baltic*=Liverpool:

New York Commercial Co. (Fine)	5,000	
New York Commercial Co. (Coarse)	12,500	17,500

JAN. 15.—By the *Batavia*=Hamburg:

Poel & Arnold (Fine)	22,000

JAN. 15.—By the *Lucania*=Liverpool:

A. T. Morse & Co. (Coarse)	11,000

JAN. 19.—By the *Majestic*=Liverpool:

Poel & Arnold (Coarse)	40,000	

JAN. 22.—By the *Umbria*=Liverpool:

A. T. Morse & Co. Coarse)	35,000	
George A. Alden & Co. (Caucho)	11,000	46,000

JAN. 23.—By the *Hudson*=Havre:

Constantine P. Santos (Fine)	11,500

OTHER ARRIVALS AT NEW YORK

CENTRALS.

	POUNDS.	
DEC. 26.—By the *Allianca*=Colon:		
Hirzel, Feltman & Co	32,000	
Dumarest Bros. & Co	6,700	
Lawrence Johnson & Co	6,100	
A. Santos & Co	4,200	
G. Amsinck & Co	3,600	
Roldan & Van Sickle	2,500	
W. R. Grace & Co	1,300	
Charles E. Griffin	1,300	
Isaac Brandon & Bros	500	58,200
DEC. 26.—By the *Sabine*=Mobile:		
Manhattan Rubber Mfg. Co	2,000	
G. Amsinck & Co	2,000	
Eggers & Heinlein	700	4.700
DEC. 30.—By the *Celtic*=Liverpool:		
General Rubber Co	41,000	
George A. Alden & Co	28,000	
H. W. Peabody & Co	7,000	76,000
DEC. 30.—By the *Orizaba*=Mexico:		
American Trading Co	700	
Harburger & Stack	500	1,200
JAN. 2.—By the *Hostilius*=Montevideo:		
American Commercial Co		30,000
JAN. 2.—By the *Campania*=Liverpool:		
General Rubber Co		11,000
JAN. 2.—By the *Finance*=Colon:		
Hirzel, Feltman & Co	16,500	
Mann & Emdon	4,000	
G. Amsinck & Co	3,000	23,500
JAN. 2.—By the *Yucatan*=Mexico:		
H. Marquardt & Co	3,500	
Harburger & Stack	1,500	
Strube & Ultze	1,500	6,500
JAN. 2.—By the *Siberia*=Colombia:		
D. A. De Lima & Co	2,500	
Fould & Co	2,500	
Isaac Brandon & Bros	800	
Pedro A. Lopez	500	6,300
JAN. 4.—By the *Tagus*=Carribbean:		
J. A. Medina & Co	1,500	
E. B. Strout	1,500	
G. Amsinck & Co	1,500	
Chalmers & Guthrie	2,500	
Meyer Hecht	500	
Kunhardt & Co	500	8,000

CENTRALS—Continued.

JAN. 5.—By the *Rio Grande*=Mobile:

A. T. Morse & Co	7,000	
Manhattan Rubber Mfg. Co	3,500	
Eggers & Heinlein	3,000	
Salazona & Co	2,000	
G. Amsinck & Co	1,500	17,000

JAN 5.—By the *Pennsylvania*=Hamburg:

A. T. Morse & Co	18,500	
Rubber Trading Co	5,000	
General Rubber Co	2,500	26,000

JAN. 8.—By the *Mexico*=Panama:

Piza, Nephews Co		4,000

JAN. 6.—By the *Philadelphia*=London:

Poel & Arnold		22,500

JAN. 8.—By the *Esperanza*=Mexico:

E. Steiger & Co	15,000	
Graham, Hinkley & Co	1,000	
Thebaud Brothers	700	
Harburger & Stack	500	
European Option	22,500	26,200

JAN. 8.—By the *Minnehaha*=London:

General Rubber Co	47,000	
George A. Alden & Co	35,000	82,000

JAN. 8.—By the *Carmania*=Liverpool:

George A. Alden & Co		53,000

JAN. 8.—By the *Altai*=Colombia:

Cortez Commercial Co	2,000	
D. A. De Lima & Co	1,500	
Roldan & Van Sickle	1,000	
Fould & Co	1,500	
A. Held	800	
A. S Lascellas & Co	600	
Mecke & Co	500	
G. Amsinck & Co	500	
Isaac Brandon & Bros	700	9,100

JAN. 9.—By the *Calderan*=Bahia:

American Commercial Co	15,000	
Hirsch & Kaiser	10,000	
Poel & Arnold	3,300	28,300

JAN. 11.—By the *Proteus*=New Orleans:

A. N. Rotholz & Co	7,000	
A. T. Morse & Co	5,000	
G. Amsinck & Co	4,000	
Manhattan Rubber Mfg Co	2,000	18,000

JAN 12.—By the *Lowlands*=Greytown:

G Amsinck & Co	2,200	
E. B Strout	2,200	
Lawrence Johnson & Co	800	
W. R. Grace & Co	500	5,700

JAN. 13.—By the *City of Washington*=Tampico:

Edward Maurer	20,000	
Continental Mexico Co	11,500	
Graham, Hinkley & Co	1,000	32,500

JAN. 15.—By the *Advance*=Colon:

J. A. Medina & Co	3,000	
Wessels & Kulenberg	3,000	
Smithers Nordenholt & Co	800	
Silva, Bussenius & Co	900	
Eggers & Heinlein	800	
Isaac Brandon & Bros	500	9,000

JAN. 15.—By the *Vigilancia*=Mexico:

Harburger & Stack	3,500	
E. Steiger & Co	2,500	
Graham, Hinkley & Co	1,500	
H Marquardt & Co	1,000	8,500

JAN. 17.—By the *Havana*=Colon:

Hirzel, Feltman & Co	7,000	
G. Amsinck & Co	5,200	
Dumarest Bros. & Co	6,300	
A. Santos & Co	3,000	
Roldan & Van Sickle	1,500	
Mann & Emdon	2,200	
Lawrence Johnson & Co	1,100	
George A. Alden & Co	1,000	27,300

JAN 17.—By the *Sarnia*=Colombia:

Roldan & Van Sickle	1,500	
D. A. De Lima & Co	1,500	
Cortez Commercial Co	1,500	
American Trading Co	1,000	
Pedro A Lopez	800	
A D. Straus & Co	500	6,800

JAN. 18.—By the *Atrato*=Greytown:

E. B. Strout	13,500	
G. Amsinck & Co	7,000	
Meyer Hecht	3,000	
J. A. Medina & Co	2,000	
D A De Lima & Co	1,500	
American Trading Co	1,000	
Kunhardt & Co	1,000	29,000

JAN. 23.—By the *Alleghany*=Colombia:

Isaac Brandon & Bros	2,200	
Roldan & Van Sickle	1,500	
Isaac Kubie & Co	1,500	
Mecke & Co	1,500	
A. A. Lindo & Co	700	7,400

CENTRALS—Continued

JAN. 23.—By the *Allianca*=Colon:

Roldan Van Sickle	7,500	
Hirzel, Feltman & Co	6,500	
Laurence Johnson & Co	2,900	
G. Amsinck & Co	2,500	
Dumarest Bros. & Co	1,500	
A. M. Capen's Sons	1,500	
American Trading Co	600	23,000

JAN. 23.—By the *Tennyson*=Bahia:

American Commercial Co	3,500	
A. D. Hitch & Co	1,000	
Hirsch & Kaiser	1,000	5,500

JAN. 23.—By the *Bulgaria*=Hamburg:

Rubber Trading Co		7,000

JAN. 24.—By the *Sabine*=Mobile:

A. T. Morse & Co	30,000	
Manhattan Rubber Mfg. Co	20,000	
G. Amsinck & Co	8,000	
A. N. Rotholz	5,000	
Eggers & Heinlein	2,000	
E. P. Strout	1,500	66,500

AFRICANS.

	POUNDS.	
DEC. 26.—By the *Zeeland*=Antwerp:		
Poel & Arnold	75,000	
Joseph Cantor	15,000	
Rubber Trading Co	13,500	
A T. Morse & Co	11,500	115,000
DEC. 26.—By the *Candaa*=Liverpool:		
Poel & Arnold	5,000	
George A. Alden & Co	4,500	9,500
DEC. 27.—By the *Manchester*=Hamburg:		
General Rubber Co		56,000
DEC. 30.—By the *Graf Waldersee*=Hamburg:		
A. T. Morse & Co	76,000	
George A. Alden & Co	13,000	
Poel & Arnold	5,000	94,000
DEC 30.—By the *Celtic*=Liverpool:		
A. T. Morse & Co	41,000	
Henry A. Gould Co	10,000	
Poel & Arnold	9,000	
George A. Alden & Co	7,000	67,000
JAN. 2.—By the *Campania*=Liverpool:		
George A. Alden & Co.		156,000
JAN. 2.—By the *La Touraine*=Havre:		
George A. Alden & Co		22,500
JAN. 3.—By the *Statendam*=Rotterdam:		
Poel & Arnold		50,000
JAN. 4.—By the *Southwark*=Antwerp:		
Poel & Arnold	237,000	
A. T. Morse & Co	40,000	
Robinson & Tallman	68,000	
George A. Alden & Co	52,000	
General Rubber Co	13,000	410,000
JAN. 4.—By the *Armenian*=Liverpool:		
F. R. Muller Co	45,000	
Poel & Arnold	27,000	
A. T. Morse & Co	40,000	
George A. Alden & Co	4,000	
Rubber Trading Co	7,000	123,000
JAN. 5.—By the *Cedric*=Liverpool:		
Poel & Arnold	85,000	
George A. Alden & Co	5,000	90,000
JAN. 5.—By the *Pennsylvania*=Hamburg:		
A. T. Morse & Co	35,000	
Earle Brothers	8,000	43,000
JAN 8.—By the *Carmania*=Liverpool:		
A. T. Morse & Co		25,000
JAN. 8.—By the *La Gascoyne*=Havre:		
Robinson & Tallman		13,500
JAN. 9.—By the *Vaderland*=Antwerp:		
Joseph Cantor		30,000
JAN. 10.—By the *Bovic*=Liverpool:		
Poel & Arnold	56,000	
F. R. Muller Co	5,000	61,000
JAN. 15.—By the *Lucania*=Liverpool:		
A. T. Morse & Co	4,500	
Joseph Cantor	2,500	
George A. Alden & Co	22,000	29,000
JAN. 15.—By the *Amerika*=Hamburg:		
A. T. Morse & Co	50,000	
Poel & Arnold	4,500	54,500
JAN. 17.—By the *Kroonland*=Antwerp:		
A. T. Morse & Co	17,000	
Rubber Trading Co	9,000	
George A. Alden & Co	2,000	28,000

AFRICANS—Continued.

JAN. 9.—By the *Majestic*=Liverpool:

Poel & Arnold	25,000	
George A. Alden & Co	15,000	
A. T. Morse & Co	4,500	44,500
JAN. 22.—By the *Victorian*=Liverpool:		
F. R. Muller Co		46,000
JAN. 22.—By the *Umbria*=Liverpool:		
George A. Alden & Co	35,000	
A. T. Morse & Co	20,000	55,000
JAN. 24.—By the *Cevic*=Liverpool:		
General Rubber Co		75,000
JAN. 24.—By the *Moltke*=Hamburg:		
General Rubber Co	22,500	
Poel & Arnold	25,000	
George A. Alden & Co	13,500	
Rubber Trading Co	25,000	
Earle Brothers	7,000	
A. T. Morse & Co	11,000	104,000
JAN. 24.—By the *Sloterdyk*=Rotterdam:		
Earle Brothers		7,000

EAST INDIAN.

DEC. 26.—By the *Mesaba*=London:		
George A. Alden & Co		3,500
JAN. 2.—By the *St. Louis*=London:		
Poel & Arnold	34,000	
George A. Alden & Co	4,500	38,000
JAN 6.—By the *Philadelphia*=London:		
Robinson & Tallman	7,000	
Poel & Arnold	3,500	10,500
JAN. 8.—By the *Clan Maclachan*=Colombo:		
George A. Alden & Co		3,500
JAN. 8.—By the *Alston*=Singapore:		
A. T. Morse & Co	15,000	
Poel & Arnold	13,500	
Pierre T. Betts	5,500	34,000
JAN. 8.—By the *Minnehaha*=London:		
George A. Alden & Co		16,000
JAN. 15.—By the *St. Paul*=London:		
Robinson & Tallman	4,500	
Earle Brothers	2,500	7,000
JAN. 22.—By the *Minnetonka*=London:		
Poel & Arnold	47,000	
George A. Alden & Co	11,000	
F. R. Muller Co	7,000	65,000

GUTTA-JELUTONG.

DEC. 26.—By the *Canada*=Liverpool:		
D A. Shaw & Co		10,000
JAN. 8.—By the *Minnehaha*=London:		
George A. Alden & Co		13,500
JAN. 8.—By the *Alston*=Singapore:		
Pierre T. Betts	100,000	
Robinson & Tallman	55,000	155,000

GUTTA-PERCHA AND BALATA.

	POUNDS.
DEC. 30.—By the *Waldersee*=Hamburg:	
Rubber Trading Co	1,400
JAN. 2.—By the *St. Louis*=London:	
F. R. Muller Co	11,500
JAN. 8.—By the *Alston*=Singapore:	
George A. Alden & Co	22,500
JAN. 24.—By the *Moltke*=Hamburg:	
To Order	7,000

BALATA.

DEC. 26.—By the *Noordam*=Rotterdam:	
Earle Brothers	11,500
JAN. 23.—By the *Sloterdyk*=Rotterdam:	
Earle Brothers	17,000

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—DECEMBER.

Imports:	Pounds.	Value.
India-rubber	5,829,072	$4,463 177
Gutta-percha	42,194	13,814
Gutta jelutong (Pontianak)	2,285 710	75,924
Total	8,156,976	$4,552,915
Exports:		
India-rubber	195,351	$ 183,376
Reclaimed rubber	221,314	29,040
Rubber scrap imported	806,372	$ 56,326

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.

MONTHS.	IMPORTS	EXPORTS.	NET IMPORTS.
November, 1905	4,606,153	358,126	4,248 027
January-October.....	53,573.647	2,770,160	50,803.487
Eleven months. 1905....	58,179.800	3,128 286	55,051,514
Eleven months, 1904....	55,560,506	3,117,566	52,442,940
Eleven months, 1903....	50,868,845	3 283,398	47,585,447

GREAT BRITAIN.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
November, 1905.....	6,315,008	2.575,552	3,739.456
January-October.....	51,438,128	28,417,984	23.020,144
Eleven months, 1905....	57,753,136	30,993,536	26,759,600
Eleven months, 1904...	51,072,000	30,417,302	20,654,698
Eleven months, 1903....	49,332,864	34 996,304	14,336,560

GERMANY.

MONTHS	IMPORTS	EXPORTS.	NET IMPORTS.
November, 1905	4,293,080	1,409,760	2,883,320
January-October...	37.929.540	14,277,340	23 652,200
Eleven months. 1905....	42,222,620	15,687,100	26,535,520
Eleven months, 1904....	33,618,200	8,717,720	24,900,480
Eleven months, 1903....	31,062,900	10,387,520	20,675.380

ITALY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
November, 1905.....	147.180	22,660	124,520
January-October.....	1.384,240	226,820	1,157,420
Eleven months, 1905....	1 531.420	249,480	1,281,940
Eleven months, 1904....	1,389,960	132,000	1,257,960
Eleven months, 1903....	1,351,240	148.720	1,202,520

FRANCE.*

MONTHS.	IMPORTS.	EXPORTS	NET IMPORTS.
November, 1905.....	2,387,440	765.160	1,622.280
January-October.....	21,604,000	14,018.620	7 585,380
Eleven months, 1905....	23,991,440	14,783,780	9.207,660
Eleven months, 1904....	19,353,840	10.442,960	8,910,880
Eleven months, 1903....	15,368,100	8.680,980	6,687,120

AUSTRIA-HUNGARY.

MONTHS.	IMPORTS	EXPORTS	NET IMPORTS.
November, 1905.....	254,980	17,600	237,380
January-October..... ...	2 464,440	27,280	2,437,160
Eleven months, 1905....	2,719,420	44.880	2,674,540
Eleven months, 1904...	2,650,780	15,180	2,635,600
Eleven months. 1903....	2,614,040	27,060	2,586.980

BELGIUM †

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
November, 1905.....	1.249,807	1,332,993	[‡ 83,186]
January-October	15,529.989	11,472,234	4,057,755
Eleven months, 1905....	16,779,796	12,805,227	3 974,569
Eleven months, 1904....	16,468,284	14,099 978	2 368,306
Eleven months, 1903....	15.129,943	11,747,425	3,382 518

NOTE.—German statistics include Gutta-percha, Balata, old (waste) rubber, and substitutes. British figures include old rubber. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

*General Commerce. †Special Commerce. ‡ Net Exports

EXPORTS OF INDIA-RUBBER FROM PARA AND MANAOS DURING 1905 (KILOGRAMS).

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL.
	FINE.	MEDIUM.	COARSE.	CAUCHO	TOTAL.	FINE	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Cmok, Schrader & Co. Para } Dusendschön & Co. Manáos }	1,782,031	457,817	1,338,017	425,676	4,003,541	3,941,275	510,752	888.381	1,472,499	6,812,907	10,816,448
Adelbert H. Alden.....	2.472,412	536.617	1,226,319	268,481	4,503,829	1,145,332	203,404	277,408	301,965	1,928,109	6,431,938
Scholz & Co.....	1,060,809	214,135	304,339	412,877	1,992 160	1,356,471	232,832	320,109	391,011	2,300 423	4,292,583
Da Costa & Co.....	177,414	35,642	730,642	68,080	1,011,778	500,502	55,522	314,426	261,556	1,132,006	2,143,784
Neale & Staats	258,363	49,557	530,884	12,403	851 207	455,868	67,373	167,516	253,091	943,848	1,795,055
Gordon & Co.	640,492	142,144	181,148	269,645	1,233,429	—	—	—	—	—	1,233,429
J. Marques & Co.....	239,969	8,063	191,836	6,254	446,122	435,463	14,799	168,540	30,343	649,145	1,095,267
R. Suarez & Co	—	—	—	—	—	473,811	2,594	82,420	41,067	599,892	599,892
Pires Teixeira & Co.....	167,045	447	78,433	—	245,925	256,983	123	65,040	2,216	324,362	570,287
J. A. Mendes & Co	167,041	26,214	254,602	1,923	449,780	—	—	—	—	—	449,780
J. H. Andresen Successors...	34,248	10,593	14,189	8,058	67,088	147,475	64,893	65,932	35,847	314,147	381,235
Denis, Crouan & Co	59,135	10,394	16,967	1,988	88.484	87,314	18,406	17,209	7.342	130,271	218,755
Kahn. Polack & Co.....	—	—	—	—	—	136,317	27,513	50,578	54,428	268,836	268,836
SinglehurstBrocklehurst&Co	—	—	2,700	—	2,700	165,337	13,875	25,637	41,294	246,143	248,843
J. C. Arana & Hos.....	—	—	51	100,940	100,991	20,583	3,256	3,992	106,993	134,824	235,815
Kanthack & Co.....	41,617	13,418	12,172	38.665	105,872	29,504	2,882	14,379	15,910	62,675	168,547
Luiz Schill & Sobrinhos	—	—	—	—	—	80,112	12,972	15,376	5 099	113,559	113,559
Reeks & Astlett.....	34,354	7,445	11,628	7,538	60,965	—	—	—	2,562	2,562	63,527
Marius & Levy.....	—	—	—	—	—	21,802	4,352	4,783	28,262	59,199	59,199
B. A. Antunes & Co	591	730	655	11,763	13,739	1,280	320	1,320	17,726	20,646	34,385
Ahlers & Co.....	—	—	—	—	—	11 981	552	2,048	112	14,693	14,693
Sundry small exporters	25,767	4,870	11.994	—	42,631	52,220	4,156	10,634	28,281	95,291	137,922
Saved ex *Cyril*	—	—	—	—	—	111,524	16,269	28,389	38,695	193,877	194,877
From Iquitos direct.....	12,175	358	14,646	12,925	40,104	621.480	34,858	424,399	1.227,391	2,308,128	2.348,232
Total	7,173,463	1,518,444	4,921,222	1.647,216	15,260,345	10,052,634	1,291,703	2,498,516	4,363 690	18,656,543	33,916,888
Total, 1904.....	8,062,104	1,630,355	5.304,429	1,222 580	16,309,468	7,615,817	993,955	2,503,520	3,221,376	14,334.668	30,644,136

BUYERS' DIRECTORY OF THE RUBBER TRADE.

CLASSIFIED LIST OF MANUFACTURERS AND DEALERS IN INDIA-RUBBER GOODS AND RUBBER MANUFACTURERS' SUPPLIES.

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MECHANICAL RUBBER GOODS

Belting.
Diaphragms.
Gaskets.
Hose (Fire, Garden, Steam).
Mats and Matting.
Mould Work.
Packing.
Valves.
Washers.

Mechanical Rubber Goods—General.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Bowers Rubber Co., San Francisco, Cal.
Alfred Calmon, Ltd., Hamburg, Germany.
Canadian Rubber Co. of Montreal.
Chicago Rubber Wks., Chicago.
Cincinnati Rubber Mfg. Co., Cincinnati.
Cleveland Rubber Co., Cleveland, O.
Combination Rubber Mfg. Co., Bloomfield, N. J.
Continental Caoutchouc & Guttapercha Co., Hanover, Germany.
Dunlop Tire & Rubber Goods Co., Toronto.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Co., New York.
Eureka Rubber Mfg. Co. of Trenton.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha & Rubber Mfg. Co., Toronto.
Home Rubber Co., Trenton, N. J.
Lake Shore Rubber Co., Erie, Pa.
Liverpool Rubber Co., Liverpool, Eng.
Chas. Macintosh & Co., Ltd., Manchester, England.

Mechanical Goods—General.—Continued.

Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., New York.
National India-Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
North British Rubber Co., Ltd., Edinburgh.
Peerless Rubber Mfg. Co., New York.
Pirelli & Co., Milan, Italy.
Republic Rubber Co., Youngstown, Ohio.
Revere Rubber Co., Boston.
Standard Rubber Co., Trenton, N. J.
Jos. Stokes Rubber Co., Trenton, N. J.
Trenton Rubber Mfg. Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Air Brake Hose.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Combination Rubber Mfg. Co., Bloomfield, N. J.
Electric Hose & Rubber Co., Wilmington, Del.
Eureka Rubber Mfg. Co. of Trenton.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, Ohio.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Asbestos.

Alfred Calmon, Ltd., Hamburg, Germany.

Belting (Canvas).

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Eureka Fire Hose Co., New York.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston-New York.

Billiard Cushions.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Combination Rubber Mfg. Co., Bloomfield, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co. N. Y.
Manhattan Rubber Mfg. Co., New York
New York Belting & Packing Co., Ltd.
New York Rubber Co., New York.
Revere Rubber Co., Boston-New York.

Blankets—Printers'.

Peerless Rubber Mfg. Co., New York.
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co.. N. Y.
Hodgman Rubber Co., New York.
Gustave Kush, New York.
Liverpool Rubber Co., Liverpool, Eng.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Brushes.

Boston Woven Hose & Rubber Co.
C. J. Bailey & Co., Boston.

Buffers.

Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Liverpool Rubber Co., Ltd., Liverpool.

Card Cloths.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.

Carriage Mats.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.

Carriage Mats.—Continued.

N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Voorhees Rubber Mfg. Co., Jersey City

Cord (Pure Rubber).

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
Electric Hose & Rubber Co., Wilmington, Del.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Deckle Straps.

Boston Belting Co., Boston.
B. F. Goodrich Co., Akron, O.
Liverpool Rubber Co., Liverpool, Eng
Mechanical Rubber Co., Chicago.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.

Door Springs.

Hodgman Rubber Co., New York.

Dredging Sleeves.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
N. J. Car Spring & Rubber Co., Jersey City.
Republic Rubber Co., Youngstown, O.

Force Cups.

Hodgman Rubber Co., New York.

Fruit Jar Rings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

RUBBER BUYERS' DIRECTORY—CONTINUED.

Fruit Jar Rings—Continued.

Cincinnati Rubber Mfg. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co. of Trenton.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, Ohio.
New York Belting & Packing Co., N. Y.

Fuller Balls.

B. F. Goodrich Co., Akron, O.
N. J. Car Spring & Rubber Co. Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Gage Glass Washers.

Boston Belting Co., Boston, Mass.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Electric Hose & Rubber Co., Wilmington, Del.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Liverpool Rubber Co., Liverpool, Eng.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Revere Rubber Co., Boston, Mass.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Gas-Bags (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Liverpool Rubber Co., Liverpool, Eng.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Tyer Rubber Co., Andover, Mass.
Voorhees Rubber Mfg. Co., Jersey City.

Gasket Tubing.

Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Revere Rubber Co., Boston.

Grain Drill Tubes.

Cincinnati Rubber Mfg. Co., Cincinnati, O.

Hat Bags.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York
Mattson Rubber Co.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

Horse Shoe Pads.

Canadian Rubber Co. of Montreal.
Home Rubber Co., Trenton, N. J.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City

Hose—Armored.

Hose—Wire Wound.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co of Montreal.
Electric Hose & Rubber Co. Wilmington, Del.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Chas. Macintosh & Co., Ltd., Manchester, England
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O
Revere Rubber Co., Boston-New York,
Voorhees Rubber Mfg. Co., Jersey City.

Hose Couplings and Fittings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Hose Linings.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.

Hose Linings.—Continued.

Empire Rubber Mfg. Co., Trenton, N.J.
Eureka Rubber Mfg. Co., Trenton, N.J.
B. F. Goodrich Co., Akron, O.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston.

Hose—Protected.

Boston Belting Co., Boston-New York.
Gutta Percha & Rubber Mfg. Co., N. Y.
Electric Hose & Rubber Co., Wilmington, Del.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Core.

Alderfer Crate Co., Sharon Centre, Ohio.

Hose Racks and Reels.

Gutta Percha & Rubber Mfg. Co., N. Y.
Wirt & Knox Mfg. Co., Philadelphia.

Hose—Rubber Lined.

COTTON AND LINEN.

Boston Belting Co., Boston-New York
Boston Woven Hose & Rubber Co.
Gutta Percha & Rubber Mfg. Co., N. Y.

COTTON AND LINEN.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Co., New York.
Eureka Rubber Mfg. Co. of Trenton.
Fabric Fire Hose Co., New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha and Rubber Mfg. Co. of Toronto.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Submarine.

Boston Belting Co., Boston-New York.
Electric Hose & Rubber Co., Wilmington, Del.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

"Jenkins '96" Packing.

Jenkins Bros., New York.

Lawn Sprinklers.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Mallets (Rubber).

Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston New York.

Mould Work.

[*See Mechanical Rubber Goods.*]

Boston Woven Hose & Rubber Co.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.
Mattson Rubber Co., New York.
Mitzel Rubber Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

"Nubian" Packing.

Voorhees Rubber Mfg. Co., Jersey City.

Oil Well Supplies.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Lake Shore Rubber Co., Erie, Pa.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-Pittsburgh.
Voorhees Rubber Mfg. Co., Jersey City.

Packing.

Strobel & Wilken Co., New York.

Paper Machine Rollers.

Boston Belting Co., Boston-New York
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Peerless Rubber Mfg. Co., New York.
Voorhees Rubber Mfg. Co., Jersey City.

Plumbers' Supplies.

Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Republic Rubber Co., Youngstown, O.

Pump Valves.

[*See Mechanical Rubber Goods.*]

Jenkins Bros., New York.

Rollers—Rubber Covered.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co. of Trenton.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston New York.

Sewing Machine Rubbers.

B. F. Goodrich Co., Akron, O.

Springs—Rubber.

Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Hardman Rubber Co., Belleville, N. J.
Liverpool Rubber Co., Liverpool, Eng.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, Ohio.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Stair Treads.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Liverpool Rubber Co., Liverpool, Eng.
Manhattan Rubber Mfg. Co., New York
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Thread.

B. F. Goodrich Co., Akron, O.
Mechanical Fabric Co., Providence, R. I.
Revere Rubber Co., Boston.

Tiling.

Canadian Rubber Co. of Montreal, Ltd.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, Ohio.
Voorhees Rubber Mfg. Co., Jersey City.

Tires.

AUTOMOBILE, BICYCLE, AND CARRIAGE.

Canadian Rubber Co. of Montreal, Ltd.
Continental Caoutchouc & Guttapercha Co., Hanover.
Dunlop Tire & Rubber Goods Co., Toronto.
Empire Rubber Mfg. Co., Trenton, N. J.
Fisk Rubber Co., Chicopee Falls, Mass.
B. F. Goodrich Co., Akron, O.

Tires.—Continued.

Gutta Percha & Rubber Mfg. Co., Toronto.
Kokomo Rubber Co., Kokomo, Ind.
Lake Shore Rubber Co., Erie, Pa.
Liverpool Rubber Co., Liverpool, Eng
Chas. Macintosh & Co., Ltd., Manchester, Eng.
North British Rubber Co., Ltd., Edinburgh.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.

AUTOMOBILE AND CARRIAGE.

Boston Belting Co., Boston-New York.
Eureka Rubber Mfg. Co., Trenton, N. J.
Revere Rubber Co., Boston-New York.

Tubing.

[*See Mechanical Rubber Goods.*]

American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Valve Balls.

Boston Belting Co., Boston.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York
Mechanical Rubber Co., Chicago.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

Valve Discs.

American Hard Rubber Co., New York.
Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Valves.

[*See Mechanical Rubber Goods.*]

Jenkins Bros., New York-Chicago.

Wringer Rolls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Republic Rubber Co., Youngstown, O.

DRUGGISTS' AND STATIONERS' SUNDRIES

Atomizers.

Bandages.

Bulbs.

Syringes.

Water Bottles.

Druggists' Sundries—General.

American Hard Rubber Co., New York.
C. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Est. of Jos. Bachrach, Brooklyn, N. Y.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
Mitzel Rubber Co., Akron, O.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass

Balloons.

King & Leatherow, Newark, N. J.

RUBBER BUYERS' DIRECTORY—CONTINUED.

Balls, Dolls and Toys.

Canadian Rubber Co. of Montreal.
Continental Caoutchouc & Guttapercha Co.
B. F. Goodrich Co., Akron, O.
New York Rubber Co., New York

Combs.

American Hard Rubber Co., New York

Elastic Bands.

Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston
Tyer Rubber Co., Andover, Mass.

Erasive Rubbers.

Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Mattson Rubber Co., New York.

Finger Cots.

Faultless Rubber Mfg. Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.

Gloves.

Canadian Rubber Co. of Montreal.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
King & Leatherow, Newark, N. J.
Pure Gum Specialty Co., Barberton, O.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Davol Rubber Co., Providence, R. I.
Hardman Rubber Co., Belleville, N. J.
Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Sheetings.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Ice Bags and Ice Caps.

Est. of Jos. Bacharach, Brooklyn, N. Y.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Pure Gum Specialty Co., Barberton, O
Tyer Rubber Co., Andover, Mass.

Life Preservers.

Hodgman Rubber Co., New York.

Nipples.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O
Tyer Rubber Co., Andover, Mass.

Sponges (Rubber).

Faultless Rubber Co., Ashland, Ohio.

Stationers' Sundries.

American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York-Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass

Stopples (Rubber).

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York.
New York Belting & Packing Co., N. Y.
Tyer Rubber Co., Andover, Mass.

Throat Bags.

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Tyer Rubber Co. Andover, Mass.

Tobacco Pouches.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND SURFACE GOODS

Air Goods (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co, Akron, O.
Hodgman Rubber Co., New York.
New York Rubber Co., New York.
National India Rubber Co., Providence.
Tyer Rubber Co., Andover, Mass.

Air Mattresses.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.

Barbers' Bibs.

Davol Rubber Co., Providence, R. I.
Tyer Rubber Co., Andover, Mass.

Bathing Caps.

Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.

Bellows Cloths.

Boston Rubber Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.

Calendering.

La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass.

Carriage Ducks and Drills.

Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J
Eureka Rubber Mfg. Co. of Trenton.
Gutta Percha & Rubber Mfg. Co., Toronto.

Clothing.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.

Cravenette.

Cravenette Co., Ltd.

Diving Dresses.

Hodgman Rubber Co., New York.

Dress Shields.

Mattson Rubber Co., New York.

Horse Covers.

Hodgman Rubber Co., New York.

Leggings.

Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.

Mackintoshes.

[See Clothing.]

Proofing.

Canadian Rubber Co. of Montreal.
La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass.

Rain Coats.

Cravenette Co., Ltd.

Rubber Coated Cloths.

Mechanical Fabric Co., Providence, R. I.

RUBBER FOOTWEAR

Boots and Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Alfred Caimon, Ltd., Hamburg, Germany
Canadian Rubber Co. of Montrea
L. Candee & Co., New Haven, Ct.
B. F. Goodrich Co., Akron, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hood Rubber Co., Boston.
Liverpool Rubber Co., Liverpool, Eng.
Lycoming Rubber Co., Williamsport, Pa.
Meyer Rubber Co., New York.
National India Rubber Co., Boston.
North British Rubber Co., Ltd., Edinburgh.
United States Rubber Co., New York.
Wales-Goodyear Rubber Co., Boston.
Woonsocket Rubber Co., Providence.

Heels and Soles.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Caoutchouc & Guttapercha Co., Hanover.
Grieb Rubber Co., Trenton, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Springfield Elastic Tread Co., Springfield, Ohio.

Tennis Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co. Boston.
Granby Rubber Co., Granby, Quebec.
La Crosse Rubber Mills Co, La Crosse, Wis.
Liverpool Rubber Co., Liverpool, Eng.
National India Rubber Co., Providence
United States Rubber Co., New York.

Wading Pants.

Canadian Rubber Co. of Montreal.
Hodgman Rubber Co., New York.

SPORTING GOODS

Foot Balls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, Ohio.
B. F Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.

Golf Balls.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.

Submarine Outfits.

Hodgman Rubber Co., New York.

Sporting Goods.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Striking Bags.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co, Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.

DENTAL AND STAMP RUBBER

Dental Gum.

American Hard Rubber Co., New York.
Cleveland Rubber Co., Cleveland, O.
Tyer Rubber Co., Andover, Mass.

Rubber Dam.

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Stamp Gum.

B. F. Goodrich Co., Akron, O.
Mattson Rubber Co., New York.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

ELECTRICAL

Electrical Supplies.

American Hard Rubber Co., New York.
Lake Shore Rubber Co., Erie, Pa.
Joseph Stokes Rubber Co., Trenton, N. J.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
Massachusetts Chemical Co., Boston.
Tyer Rubber Co., Andover, Mass.

Friction Tape.

Boston Belting Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Rubber Co., Akron, O.
Massachusetts Chemical Co., Boston.
Mechanical Rubber Co., Chicago.
Home Rubber Co., Trenton, N. J.
Revere Rubber Co., Boston-New York.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Joseph Stokes Rubber Co., Trenton, N. J.

Insulating Compounds.

Canadian Rubber Co. of Montreal.
Gutta-Percha & Rubber Mfg. Co., Toronto.
Massachusetts Chemical Co., Boston.

Insulated Wire and Cables.

National India Rubber Co., Providence

Splicing Compound.

Home Rubber Co., Trenton, N. J.

MISCELLANEOUS

Architect and Engineer.

Herbert S. Kimball, Boston.

Cement (Rubber).

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

Chemical Analyses.

Durand Woodman, Ph. D., New York.
H. L. Terry, Manchester, England.

Chemists.

Stephen P. Sharples, Boston, Mass.
Durand Woodman, Ph. D., New York.

Engraver.

P. C. Smith, Boston, Mass.

Laboratory—Tests, Analyses.

G. E. Heyl-Dia, New York.

Rubber Journals.

Gummi-Zeitung, Dresden, Germany.

Rubber Planting.

Mexican Mutual Rubber Co., Chicago.

Rubber Tree Seeds.

J. P. William & Bros., Heneratgoda, Ceylon.

Typewriters.

Remington Typewriter Co., New York.

MACHINERY AND SUPPLIES FOR RUBBER MILLS.

RUBBER MACHINERY

Acid Tanks.
Birmingham Iron Foundry, Derby, Ct.

Band Cutting Machine.
A. Adamson, Akron, O.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.

Belt Folding Machines.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Belt Slitters.
Cloth Dryers.
Gearing.
Shafting.
Wrapping Machines.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Belt Stretchers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
Hoggson & Pettis Mfg. Co., New Haven.

Bollers.
William R. Thropp, Trenton, N. J.

Braiders.
New England Butt Co., Providence, R. I.

Brands and Labels.
Horace E. Fine, Trenton, N. J.

Buckles.
The Weld Mfg. Co., Boston.

Cabling Machinery.
Alton Machine Co., New York.

Calenders.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
Textile-Finishing Machinery Co., Providence, R. I.

Castings.
A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach Co., Ansonia, Ct.

Chucks (Lathe).
Hoggson & Pettis Mfg. Co., New Haven.

Churns.
American Tool & Machine Co., Boston.

Clutches.
Farrel Foundry & Mach. Co., Ansonia, Ct

Crackers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.

Devulcanizers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Edred W. Clark, Hartford, Ct.
William R. Thropp, Trenton, N. J.

Dies.
Barbour Bros., Trenton, N. J.
Hoggson & Pettis Mfg. Co., New Haven.

Doubling Machines.
American Tool & Machine Co., Boston.

Drying Apparatus.
American Process Co., New York.

Drying Machines.
Alton Machine Co., New York.
Joseph P. Devine, Buffalo, N. Y.
Birmingham Iron Foundry, Derby, Ct.
Textile-Finishing Machinery Co., Providence, R. I.

Embossing Calenders.
Textile-Finishing Machinery Co., Providence, R. I.

Engines, Steam.
Alton Machine Co., New York.
William R. Thropp, Trenton, N. J.

Engraving Roll.
Hoggson & Pettis Mfg. Co., New Haven.

Factory Construction.
Herbert S. Kimball, Boston.

Grinders and Mixers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.

Hangers.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Hose Machines.
A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
New England Butt Co., Providence, R. I.

Hydraulic Accumulators.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Hydraulic Machinery.
Insulating Machinery.
Iron Castings.
Alton Machine Co., New York.

Lasts (Rubber Shoe).
Middlesex Last Co., Boston.

Lathes—Hard Rubber.
A. Adamson, Akron, Ohio.

Lathes—Jar Ring.
A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
William R. Thropp, Trenton, N. J.

Machinists' Tools.
Hoggson & Pettis Mfg. Co., New Haven.

Moulds.
A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
W. E. Arnold, Malden, Mass.
Barbour Bros., Trenton, N. J.
Birmingham Iron Foundry, Derby, Ct.
Hoggson & Pettis Mfg. Co., New Haven.

Pillow Blocks.
Farrel Foundry & Mach. Co., Ansonia, Ct

Presses (for Rubber Work.)
A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Birmingham Iron Foundry, Derby, Ct.
Boomer & Boschert Press Co., Syracuse, N. Y.
Edred W. Clark, Hartford, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.

Pumps.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Boomer & Boschert Press Co., Syracuse.
Farrel Foundry & Mach. Co., Ansonia, Ct

Racks for Boot and Shoe Cars.
Hoggson & Pettis Mfg. Co., New Haven.

Reducing Valves.
Mason Regulator Co., Boston.

Rollers (Hand).
Hoggson & Pettis Mfg. Co., New Haven.

Rubber Covering Machines.
Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Separators.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Separators for Reclaimed Rubber.
American Process Co., New York.

Special Rubber Machinery.
Alton Machine Co., New York.
Wellman Sole Cutting Machine Co., Medford, Mass.

Spreaders.
Alton Machine Co., New York.
American Tool & Machine Co., Boston.
Birmingham Iron Foundry, Derby, Ct.
New England Butt Co., Providence, R. I.

Steam Traps and Specialties.
Jenkins Bros., New York.
Mason Regulator Co., Boston.
Osgood Sayen, Philadelphia, Pa.

Steel Stamps.
Hoggson & Pettis Mfg. Co., New Haven.

Stitchers (Hand).
Hoggson & Pettis Mfg. Co., New Haven

Strip Covering Machines.
Strip Cutters.
Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Tire Molds.
Bay State Machine Co., Erie, Pa.

Tubing Machines.
A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Edred W. Clark, Hartford, Ct.
John Royle & Sons, Paterson, N. J.

Vacuum Drying Chambers.
Alton Machine Co., New York.
Joseph P. Devine, Buffalo, N. Y.

Varnishing Machines.
Birmingham Iron Foundry, Derby, Ct.

Vulcanizers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.

Washers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct
William R. Thropp, Trenton, N. J.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Wire Insulating Machines.
Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Wire Rope Machinery.
Alton Machine Co., New York.

SECOND-HAND MACHINERY.

W. C. Coleman Co., Rochelle Park, N. J
Philip McGrory, Trenton, N. J.
M. Norton & Co., Charlestown, Mass.

FACTORY SUPPLIES

Acid (Carbolic).
Barrett Mfg. Co., Philadelphia.

Antimony, Sulphurets of.
GOLDEN.
Action-Ges. Georg Egestorff's Salzwerke, Linden, Germany.
Atlas Chemical Co., Newtonville, Mass.
GOLDEN AND CRIMSON.
Joseph Cantor, New York.
Geo. F. Lufbery, Jr., Elizabeth, N. J.
Wm. H. Scheel, New York.
Stamford (Conn.) Rubber Supply Co.
Typke & King, London, England.

Balata.
George A. Alden & Co., Boston.

Benzol.
Barrett Mfg. Co., Philadelphia.
Samuel Cabot, Boston.

Black Hypo.
Joseph Cantor, New York.
William H. Scheel, New York.
Typke & King, London, England.

Boxes (Wood).
Henry H. Sheip & Co., Philadelphia.

Brass Fittings.
A. Schrader's Son, Inc., New York.

Carbon Bisulphide.
George W. Speaight, New York.

Caustic Soda.
Acker Process Co., Niagara Falls, N. Y.

Chemicals.
Acker Process Co., Niagara Falls, N. Y.
Empire Palm Oil Co., Boston.
George W. Speiaght, New York.

Colors.
Joseph Cantor, New York.
William H. Scheel, New York.
Toch Bros., New York.
Typke & King, London, England.

Crude Rubber.
George A. Alden & Co., Boston.
A. W. Brunn, New York.
Hagemeyer & Brunn, New York.
Hirsch & Kaiser, Inc., New York.
F. R. Müller & Co., New York.
Rubber Trading Co., New York-Boston.

Drills.
Duck (Cotton).
J. H. Lane & Co., New York.

Gilsonite.
William H. Scheel, New York.

Graphite.
United States Graphite Co., Philadelphia.

Graphite Grease.
Jos. Dixon Crucible Co., Jersey City

Guayule Rubber.
Ed. Maurer, New York.

Gutta-Percha.
George A. Alden & Co., Boston.
Rubber Trading Co., New York-Boston

Hose Bands, Straps & Menders.
Boston Woven Hose & Rubber Co.
William Yerdon, Fort Plain, N. Y.

Hose Pipes, Nozzles & Couplings.
Boston Woven Hose & Rubber Co.
Eureka Fire Hose Co., New York.
Revere Rubber Co., Boston.
A. Schrader's Son, Inc., New York.

Hydro-Carbon Products.
Geo. A. Alden & Co., Boston.
Raven Mining Co., Chicago, Ill.
William H. Scheel, New York.

Infusorial Earth.
Stamford (Conn.) Rubber Supply Co.

Kapak.
Raven Mining Co., Chicago, Ill.

Lampblack.
Samuel Cabot, Boston.

Lawn-Hose Supporters.
C. J. Bailey & Co., Boston.

Lead—Blue.
Lead—Sublimed White.
Picher Lead Co., Chicago, Ill.

Lithopone.
Gab riel & Schall, New York.

Naphtha.
Barrett Mfg. Co., Philadelphia.

Paris White and Whiting.
H. P. Taintor Mfg. Co., New York.

Reclaimed Rubber.
Alkali Rubber Co., Akron, Ohio.
American Reclaimed Rubber Co., Rochelle Park, N. J.
F. H. Appleton & Son, Boston.
Bloomingdale (N. J.) Soft Rubber Co.
E. H. Clapp Rubber Co., Boston, Mass.
Danversport Rubber Co., Boston.
Derby Rubber Co., Derby, Conn.
Manufactured Rubber Co.
New Jersey Rubber Co., Lambertville, N. J.
Pequanoc Rubber Co., Butler, N. J.
Philadelphia Rubber Wks., Philadelphia.
Stockton Rubber Co., Stockton, N. J.
Jos. Stokes Rubber Co., Trenton, N. J.
S. & L. Rubber Co., Chester, Pa.
U. S. Rubber Reclaiming Wks., N. Y.
Westmoreland Rubber Mfg. Co., Grapeville, Pa.
AGENTS AND DEALERS.
Philip McGrory, Trenton, N. J.
H. P. Moorhouse, Paris, France.
Rubber Trading Co., New York-Boston.
Wm. Somerville's Sons, Liverpool.

Scrap Rubber.
L. Albert & Son, Trenton, N. J.
Bers & Co., Philadelphia.
P. Broomfield & Co., Boston.
W. C. Coleman Co., Rochelle Park, N. J.
Wm. H. Cummings & Sons, New York.
Theodore Hofeller & Co., Buffalo, N. Y.
A. W. Leslie & Co., Ltd., London, Eng.
Philip McGrory, Trenton, N. J.
M. Norton & Co., Charlestown, Mass.
Henry P. Rindskopf, Brooklyn, N. Y.
San Giacomo Sons, Newark, N. J.
J. Schnurmann, London.
Schwab & Co., Philadelphia.
United States Waste Rubber Co., Brockton, Mass.
M. J. Wolpert, Odessa, Russia.

Substitute.
Joseph Cantor, New York
Geo. F. Lufbery, Jr., Elizabeth, N. J.
Massachusetts Chemical Co., Boston.
Wm. H. Scheel, New York.
Stamford (Conn.) Rubber Supply Co.
Typke & King, London, England.

Sulphur.
Battelle & Renwick, New York.
T. & S. C. White Co., New York.

Sulphur Chloride.
Acker Process Co., Niagara Falls, N. Y.
William H. Scheel, New York.
George W. Speaight, New York.
Stamford (Conn.) Rubber Supply Co.

Tire Fabrics.
J. H. Lane & Co., New York.

Tire Valves.
A. Schrader's Son, Inc., New York.

Zinc Sulphide.
Joseph Cantor, New York.
Typke & King, London, England.

Zinc White.
New Jersey Zinc Co., New York.
Stamford (Conn.) Rubber Supply Co.